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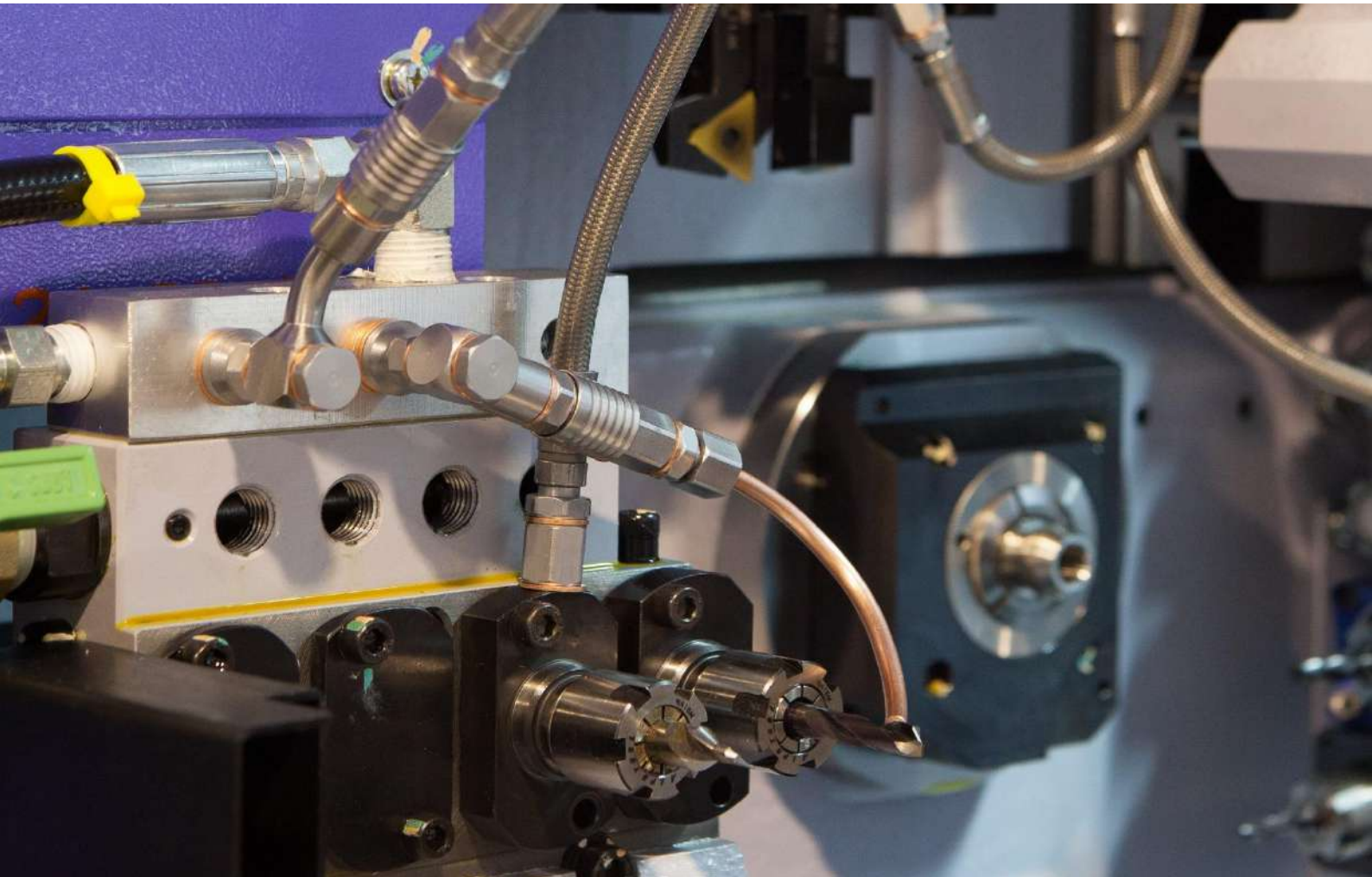
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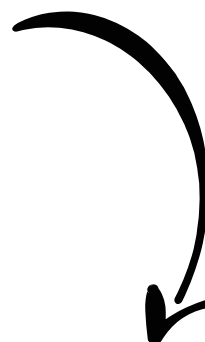
1. COMPLETE DISTRIBUTION SYSTEM WITH QUICK CONNECTIONS FOR MACHINING WITH MEDIUM AND HIGH-PRESSURE COOLANT



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DISTRIBUTION SYSTEM WITH QUICK CONNECTION INCLUDING 2 PROGRAMS OF DIFFERENT DIMENSIONS FOR MACHINING WITH COOLANT AT MEDIUM AND HIGH-PRESSURE FOR CNC LATHES

Ultra-compact quick connectors, locking and connecting plugs, flexible and rigid distribution tubes, distribution blocks, connectors, adaptors and spacers, ball and tube nozzles. A complete ecosystem of modular components to reduce time for tool set-up, tool change and optimize the way coolant is delivered all the way to the cutting edge.



Reduce tool change time by up
to 75%

Coolant distribution system (cutting oil and emulsion) totally flexible and modular, able to withstand pressures of 220 Bar and ideal for use with high pressure coolant equipment

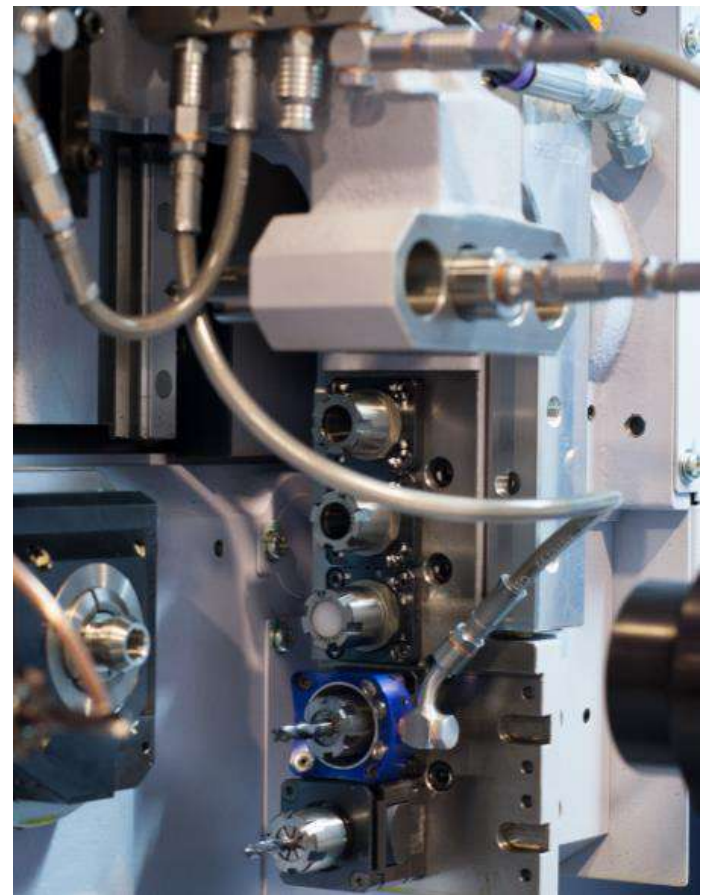
**FAST, FLEXIBLE AND SAFE TOOL
ASSEMBLY**



SCS coolant distribution systems are designed to capitalize on all the advantages offered by high pressure cooling. It allows for fast, flexible, safe and interference-free preparations for the machining of parts while ensuring the correct orientation and amount of flow rate of coolant directly to the cutting edge of the tool.

ADVANTAGES:

1. Quick and precise preparations - The flow of coolant is directed to the required point and with the necessary flow. Time reduction in preparation and better machining conditions are easily achieved.
2. Allows for optimal distribution of the coolant to the different tool holders without the performance depending on the operator who makes the preparation.
3. Guarantees that after a tool change, the coolant outlets remain in the same position and do not change even if performed by different machine operators.



***Increased tool life and efficiency -
Better surface quality, and higher
productivity.***

(Ideal for sliding-head lathes)

4. Maximum safety in performing tools changes mounted in rotary tool holders, thus avoiding possible injuries - The patented system of SCS allows to block the tool holders while keeping both hands free and making it possible to loosen the collet nut with just one hand.
5. Ease of adaptation - quick couplings and adaptors to different types of threads for tool holders or distribution blocks.
6. Flexible and reinforced tubes - Protected to withstand the impact of hot chips and with pressures of up to 220 Bar.

PRODUCT RANGE:

2 different manufacturing programs according to the required flow and internal machine available space:

- MICRO: 3.8 mm through hole for coolant supply.
- NANO: 2.3 mm through hole for coolant supply.

| Pressure (Bar) | MICRO (l/min) | NANO (l/min) |
|----------------|---------------|--------------|
| 2 | 9.5 | 3.5 |
| 8 | 19.0 | 7.0 |
| 15 | 26.0 | 9.6 |
| 20 | 30.1 | 11.0 |
| 30 | 36.9 | 13.5 |
| 50 | 47.6 | 17.5 |
| 80 | 60.3 | 22.1 |
| 100 | 67.4 | 24.7 |
| 150 | 82.5 | 30.2 |

Both programs can be connected with each other and with the Articulated Steel Flexible Distribution Tubes DECA, HECTO, MEGA and GIGA programs.

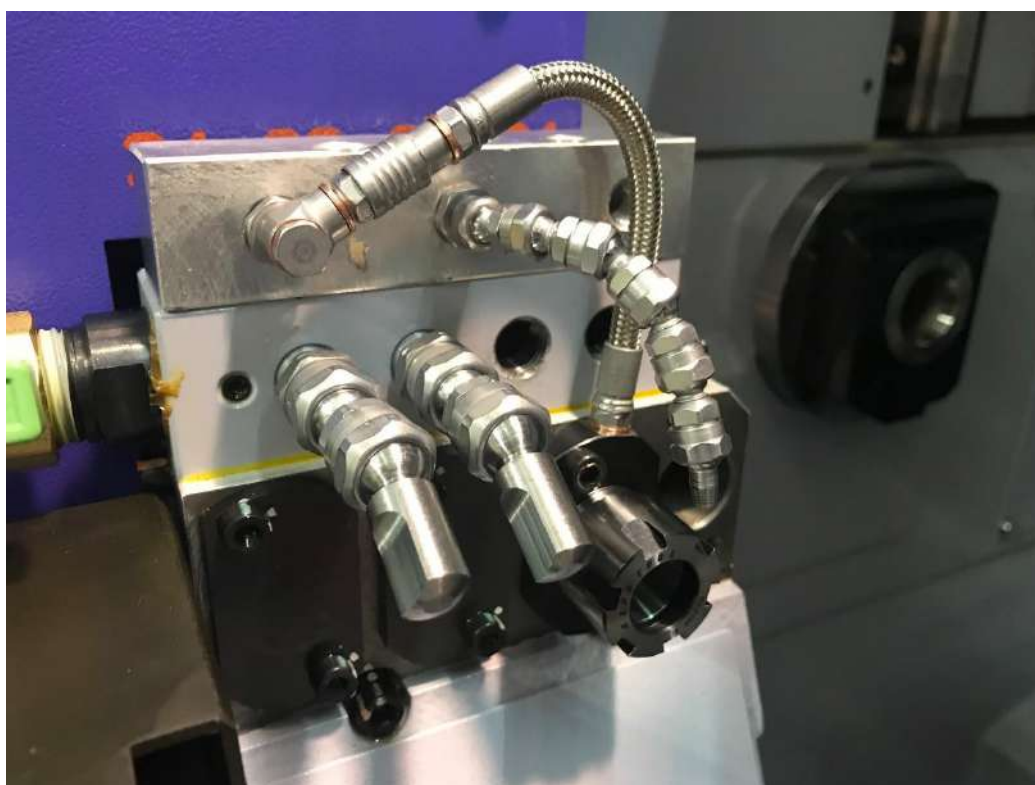
BSP threads have 1 mark in the hexagon area and NPT threads have 2 marks. Metric threads have no marks. This marking allows for easy identification.

It allows to work with emulsion or cutting oil. Resistant to pressures of up to 220 bar (3,190 psi).

| Item | MICRO Program | NANO Program |
|--|-----------------------|-----------------------|
| Minimum internal diameter of the program | 3.8 mm | 2.3 mm |
| Main program thread | M8x1 | M6x1 |
| Manufacturing material of components | Steel NiZn | Steel NiZn |
| Assembly wrench | SW11 | SW8 |
| Ideal for square tool shank dimension | 16x16, 20x20, 25x25 | 8x8, 10x10, 12x12 |
| Ideal for cylindrical tool shank dimension | Diameter \geq 16 mm | Diameter < 16 mm |
| Ideal for collet holder dimension | ER-16 or bigger | ER-11 or smaller |
| External diameter of flexible distribution tube | 8 mm | 6.5 mm |
| Minimum bending radius of flexible distribution tube | 30 mm | 15 mm |
| External diameter of copper tube | 4 mm | 3 mm |
| Quick connector dimensions | OD: 13.5 mm L: 17 mm | OD: 9.8 mm L: 11.4 mm |



MICRO flexible tubes, banjos and quick connections fittings installed in a CITIZEN L12



MICRO banjo, quick connection fitting and flexible tube mounted in the tool back post of a STAR SR-20J lathe.

MICRO PROGRAM

The inner diameter of the MICRO program is 3.8 mm and is ideal for installation with ER-16 collet tool holders, cylindrical shank tool holders (OD ≥ 16 mm) or with square shank tool holders from 16x16 mm size.

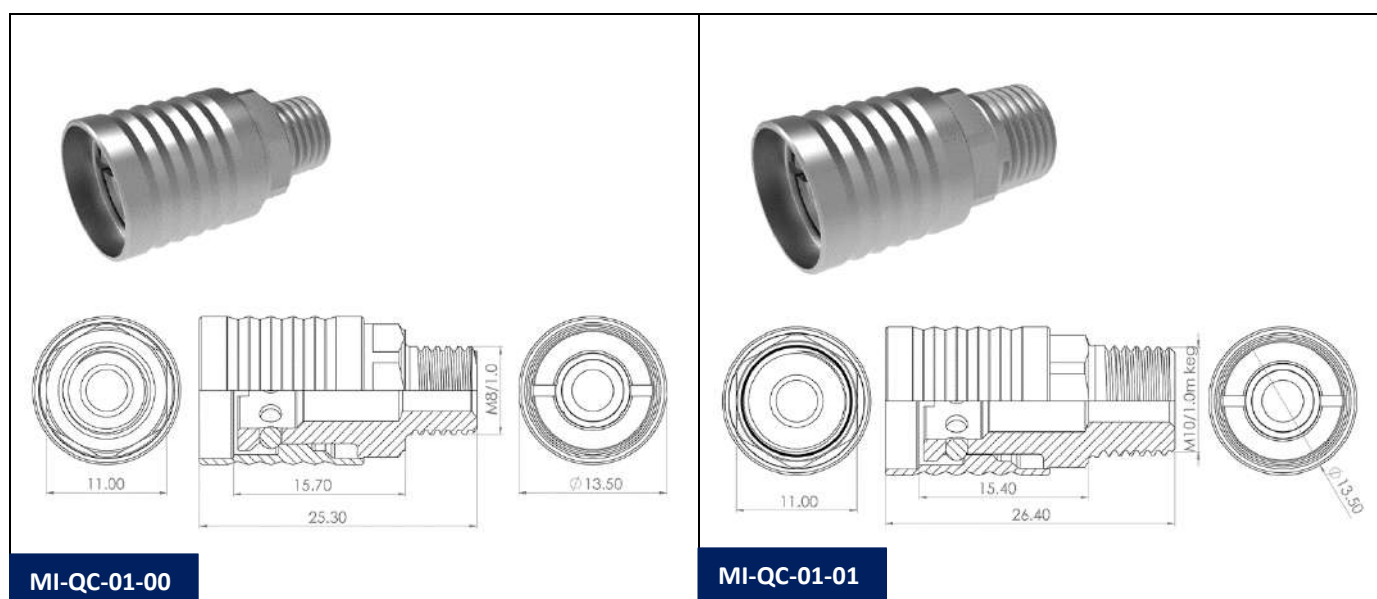
Quick connection fittings:

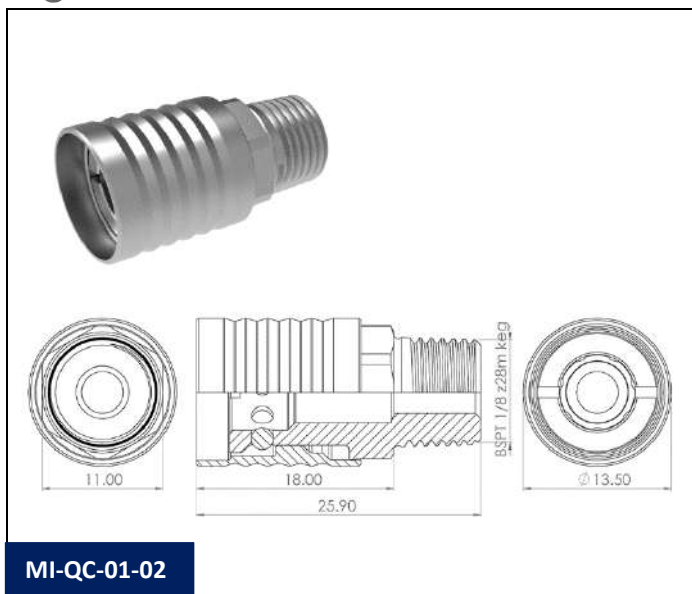
Quick connection fittings with very compact dimensions O.D.: 13.5 mm, I.D.: 3.8 mm, Length: 17 mm.

Material: Steel

Maximum pressure: 220 Bar (3.190 PSI)

| Ref. | Description |
|-------------|--|
| MI-QC-01-00 | Quick connection fitting MICRO with M8x1(M) on one end. |
| MI-QC-01-01 | Quick connection fitting MICRO with M10x1 keg(M) on one end. |
| MI-QC-01-02 | Quick connection fitting MICRO with BSPT 1/8"(M) on one end. |





Distribution tubes:

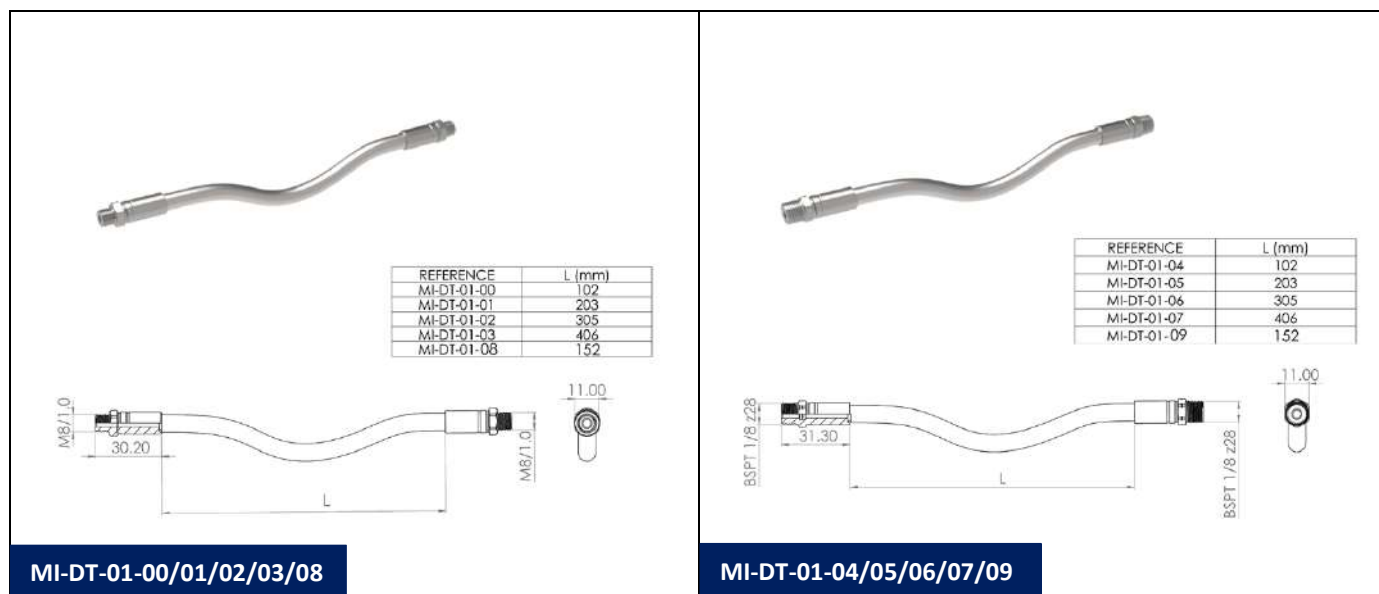
Set of distribution tubes in Teflon covered in braided stainless steel AISI 304. OD: 8 mm. ID: 3.8 mm.

Fitting in each end M8x1(M) or BSP 1/8"(M). Material: Steel

Minimum bending radius: 30 mm

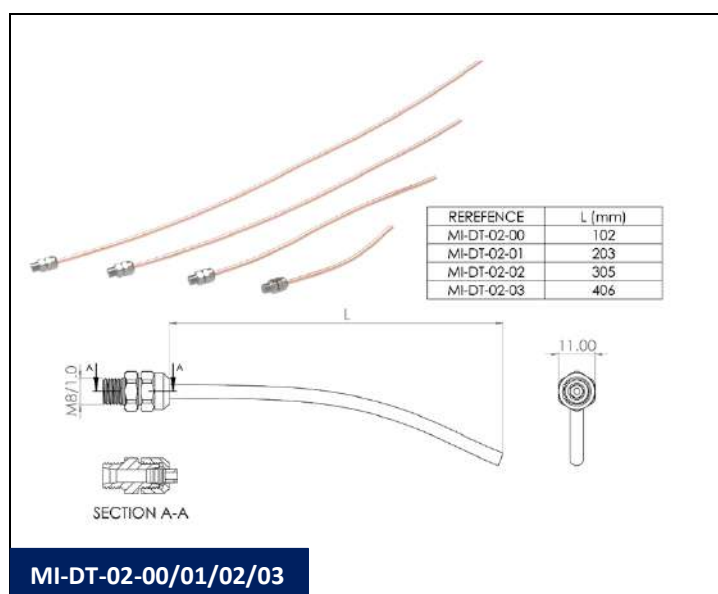
Maximum pressure: 220 Bar (3.190 PSI)

| Ref. | Description |
|-------------|--|
| MI-DT-01-00 | M8x1(M), flexible tube OD:8 mm 4" (102 mm), M8x1(M) |
| MI-DT-01-08 | M8x1(M), flexible tube OD:8 mm 6" (152 mm), M8x1(M) |
| MI-DT-01-01 | M8x1(M), flexible tube OD:8 mm 8" (203 mm), M8x1(M) |
| MI-DT-01-02 | M8x1(M), flexible tube OD:8 mm 12" (305 mm), M8x1(M) |
| MI-DT-01-03 | M8x1(M), flexible tube OD:8 mm 16" (406 mm), M8x1(M) |
| MI-DT-01-04 | BSPT1/8"(M), flexible tube ID:8 mm 4" (102 mm), BSPT1/8"(M) |
| MI-DT-01-09 | BSPT1/8"(M), flexible tube ID:8 mm 6" (152 mm), BSPT1/8"(M) |
| MI-DT-01-05 | BSPT1/8"(M), flexible tube OD:8 mm 8" (203 mm), BSPT1/8"(M) |
| MI-DT-01-06 | BSPT1/8"(M), flexible tube OD:8 mm 12" (305 mm), BSPT1/8"(M) |
| MI-DT-01-07 | BSPT1/8"(M), flexible tube OD:8 mm 16" (406 mm), BSPT1/8"(M) |



Copper distribution tubes OD: 4 mm, ID: 2 mm, with M8x1(M) thread in each end and coupling to the copper tube with sealing ring ID:4 mm.
Maximum pressure: 220 Bar (3.190 PSI)

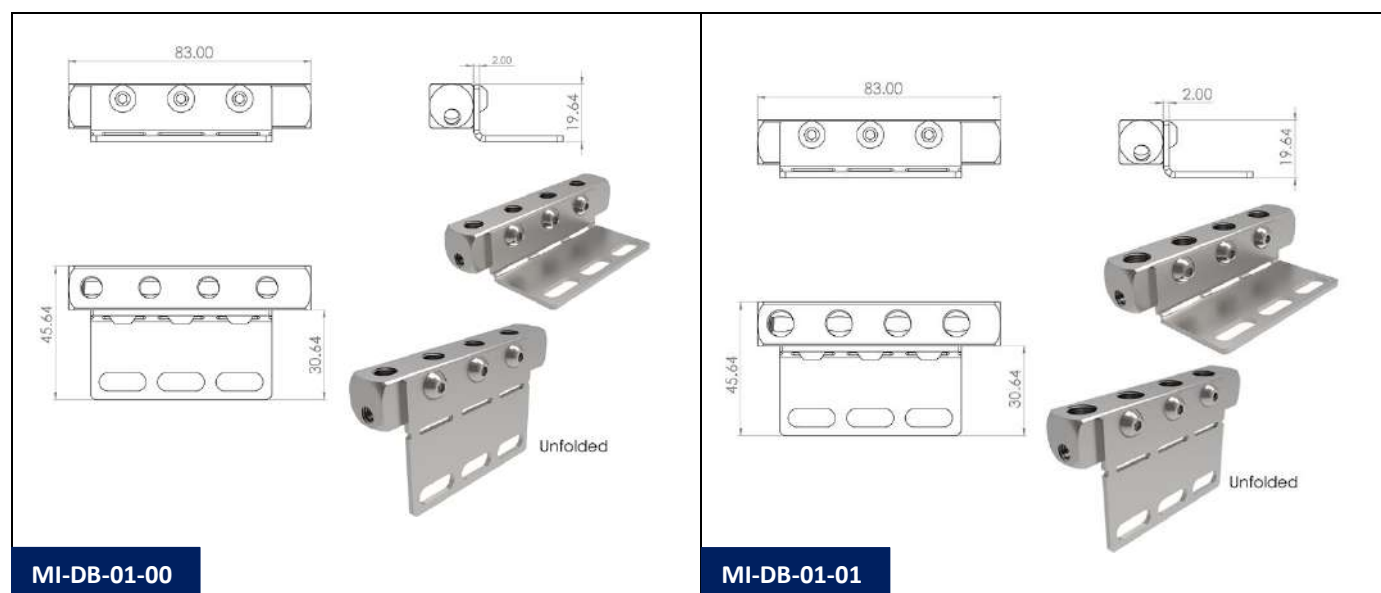
| Ref. | Description |
|-------------|--|
| MI-DT-02-00 | M8x1(M) with sealing ring, copper tube OD:4 mm and L:4" (102 mm), open end tube. |
| MI-DT-02-01 | M8x1(M) with sealing ring, copper tube OD: 4 mm and L:8" (203 mm), open end tube. |
| MI-DT-02-02 | M8x1(M) with sealing ring, copper tube OD: 4 mm and L:12" (305 mm), open end tube. |
| MI-DT-02-03 | M8x1(M) with sealing ring, copper tube OD: 4 mm and L:16" (406 mm), open end tube. |



Standard coolant distribution blocks:

Compact and space saving design. Inlet M8x1(F) or BSP 1/8"(H) and outlets M8x1(F) or BSP 1/8"(H).
Material: Steel

| Ref. | Description |
|-------------|---|
| MI-DB-01-00 | 15x15x83 mm block with coolant inlet in M8x1(F) inlet and 4 outlets in M8x1(F) in one of the faces. Includes supporting plate to machine with 3 Fastening slotted holes for M6 screw. Reversible mounting position. |
| MI-DB-01-01 | 15x15x83 mm block with coolant inlet in BSP 1/8"(F) inlet and 4 outlets in BSP 1/8"(F) in one of the faces. Includes supporting plate to machine with 3 Fastening slotted holes for M6 screw. Reversible mounting position. |



Connectors and adaptors:

To adapt connection tubes and quick connectors.

Material: Steel

- Adaptors: M8x1 to M10, M6, M5, BSP 1/8", etc.
- Banjos: short, long, curved.
- Spacers: 10, 15 and 20 mm.
- Sealing ring for copper tube

| Ref. | Description |
|-------------|--|
| MI-CA-01-00 | M8x1(F) to BSP 1/8"(M) |
| MI-CA-01-01 | M8x1(F) to M10x1(M) |
| MI-CA-01-02 | M8x1(F) to M8x1(M) |
| MI-CA-01-03 | M8x1(F) to M8x1(F) |
| MI-CA-01-04 | Nut for cutting ring ID:4 mm E11 |
| MI-CA-01-05 | M8x1(F) to M5x0.8(M) |
| MI-CA-01-06 | M8x1(F) to M6x1(M) |
| MI-CA-01-07 | M8x1(M) to M8x1(M). Also used for cutting ring ID:4 mm E11 |
| MI-CA-01-08 | M8x1(F) to M8x1 keg(M) |
| MI-CA-01-09 | BSP 1/8"(F) to M8x1(M) |
| MI-CA-01-10 | BSP 1/8"(F) to BSP 1/8"(M) |
| MI-CA-01-11 | M8x1(F) to BSPT 1/4"(M) |
| MI-CA-01-12 | M8x1(F) to BSPT 1/8"(M) |
| MI-CA-01-13 | BSP 1/8"(F) to BSPT 1/8"(M) |
| MI-CA-02-00 | Cutting ring ID:4 mm. |
| MI-CA-03-00 | Spacer H:10 mm M8x1(M)-M8x1(F) |
| MI-CA-03-01 | Spacer H:15 mm M8x1(M)-M8x1(F) |
| MI-CA-03-02 | Spacer H:20 mm M8x1(M)-M8x1(F) |
| MI-CA-03-03 | Spacer H:10 mm BSP 1/8"(M)-BSP 1/8"(F) |
| MI-CA-03-04 | Spacer H:15 mm BSP 1/8"(M)-BSP 1/8"(F) |
| MI-CA-03-05 | Spacer H:20 mm BSP 1/8"(M)-BSP 1/8"(F) |
| MI-CA-03-06 | Spacer H:10 mm M10x1(M)-M10x1(F) |
| MI-CA-03-07 | Spacer H:15 mm M10x1(M)-M10x1(F) |
| MI-CA-03-08 | Spacer H:20 mm M10x1(M)-M10x1(F) |
| MI-CA-03-09 | Spacer H:10 mm M8x1(M)-BSP 1/8"(F) |
| MI-CA-03-10 | Spacer H:15 mm M8x1(M)-BSP 1/8"(F) |
| MI-CA-03-11 | Spacer H:20 mm M8x1(M)-BSP 1/8"(F) |
| MI-CA-03-12 | Spacer H:11 mm BSP 1/8"(M)-BSP 1/8"(F) |
| MI-CA-03-13 | Spacer H:16 mm BSP 1/8"(M)-BSP 1/8"(F) |
| MI-CA-03-14 | Spacer H:21 mm BSP 1/8"(M)-BSP 1/8"(F) |
| MI-CA-04-00 | Short banjo M8x1(F) (does not include banjo bolt) |
| MI-CA-04-01 | Short banjo M8x1(M) (does not include banjo bolt) |

| Ref. | Description |
|-------------|--|
| MI-CA-04-02 | Long straight banjo M8x1(F) (does not include banjo bolt) |
| MI-CA-04-03 | Long curved banjo M8x1(F) (does not include banjo bolt) |
| MI-CA-04-04 | Banjo bolt M8x1(M) |
| MI-CA-04-05 | Banjo bolt double length M8x1(M) to connect 2 Banjos |
| MI-CA-04-06 | Short banjo M8x1(F) for banjo bolt BSP 1/8"(M) or M10x1(M) (does not include banjo bolt) |
| MI-CA-04-07 | Short banjo M8x1(M) for banjo bolt BSP 1/8"(M) or M10x1(M) (does not include banjo bolt) |
| MI-CA-04-09 | Long straight banjo M8x1(F) for banjo bolt BSP 1/8"(M) or M10x1(M) (does not include banjo bolt) |
| MI-CA-04-10 | Long curved banjo M8x1(F) for banjo bolt BSP 1/8"(M) or M10x1(M) (does not include banjo bolt) |
| MI-CA-04-11 | Short banjo M10x1(F) for banjo bolt M10x1(M) (does not include banjo bolt) |
| MI-CA-04-12 | Long straight banjo M10x1(F) for banjo bolt M10x1(M) (does not include banjo bolt) |
| MI-CA-04-13 | Short banjo BSP 1/8"(F) for banjo bolt BSP 1/8"(M) or M10x1(M) (does not include banjo bolt) |
| MI-CA-04-14 | Long straight banjo BSP 1/8"(F) for banjo bolt BSP 1/8"(M) or M10x1(M) (does not include banjo bolt) |
| MI-CA-04-15 | Banjo bolt M10x1(M) |
| MI-CA-04-16 | Banjo bolt double length M10x1(M) to connect 2 Banjos |
| MI-CA-04-17 | Banjo bolt BSP 1/8"(M) |
| MI-CA-04-18 | Banjo bolt double length BSP 1/8"(M) to connect 2 Banjos |





MI-CA-01-02



MI-CA-01-03



MI-CA-01-04



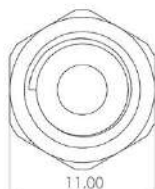
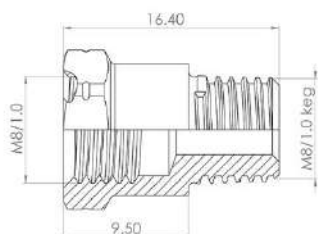
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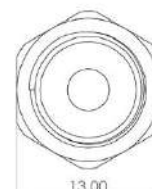
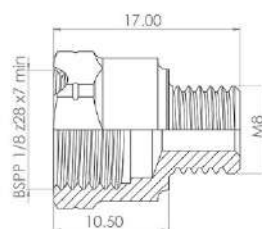
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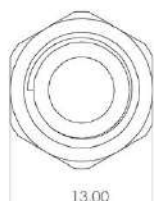
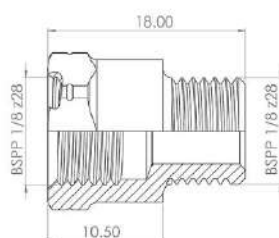
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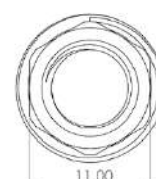
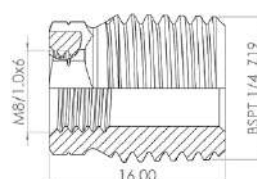
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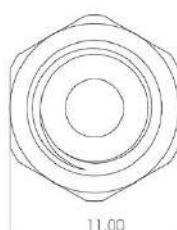
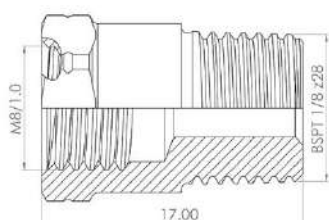
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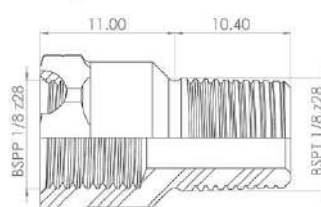
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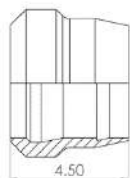
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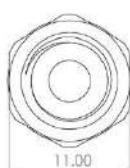
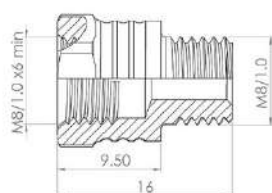
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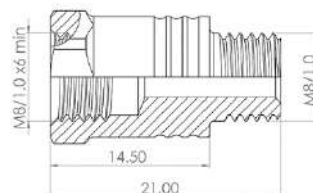
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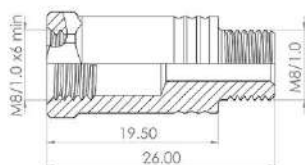
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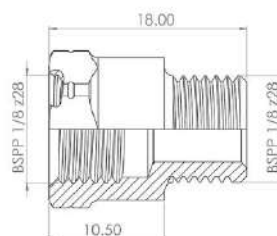
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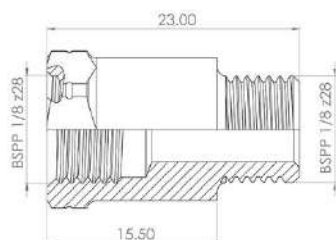
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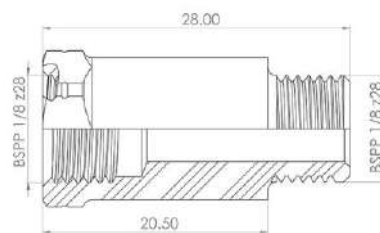
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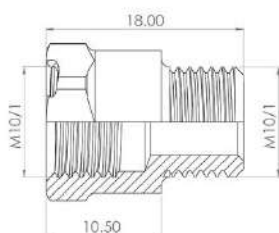
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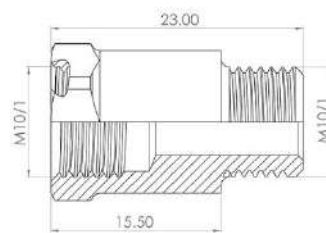
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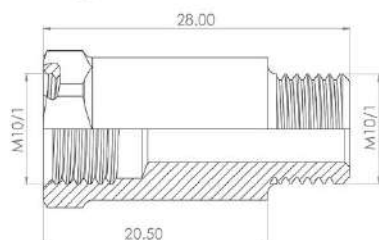
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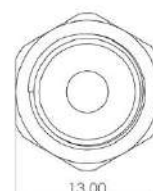
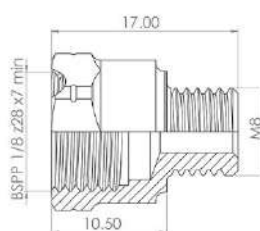
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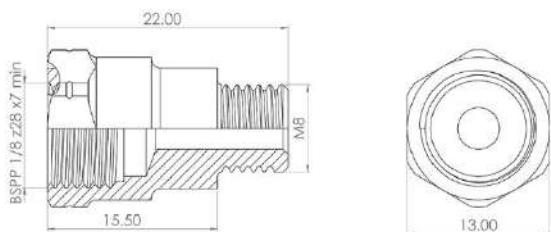
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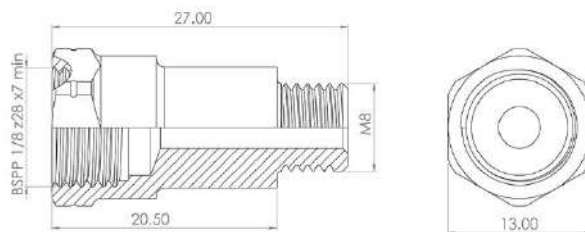
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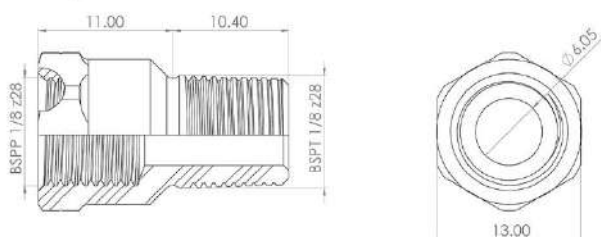
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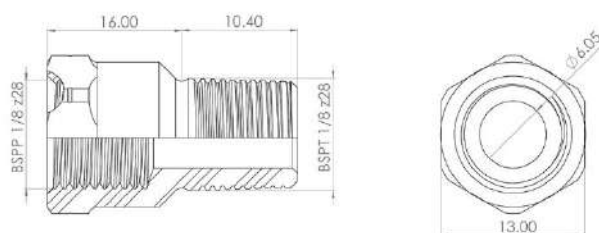
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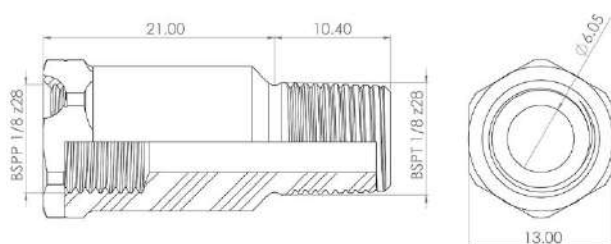
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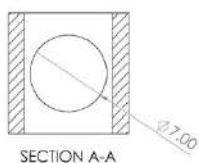
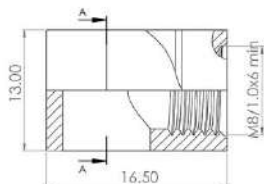
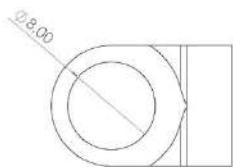
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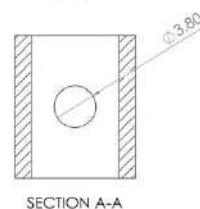
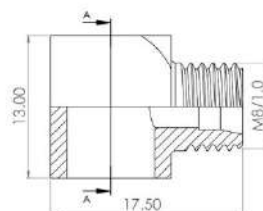
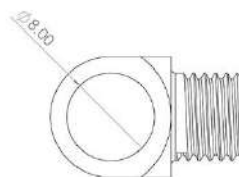
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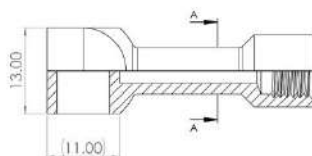
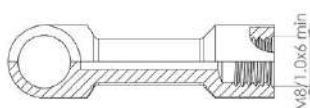
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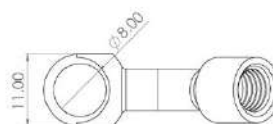
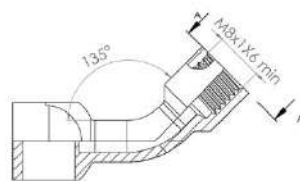
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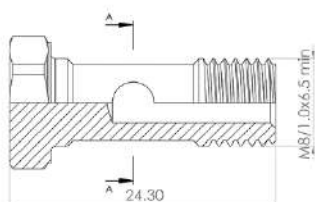
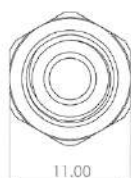
MI-CA-04-01



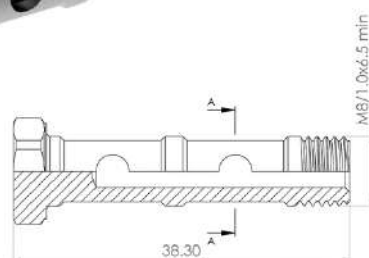
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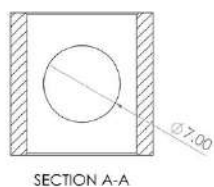
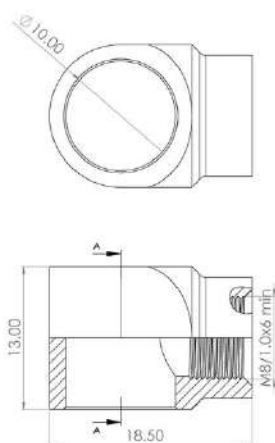
MI-CA-04-03



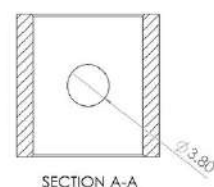
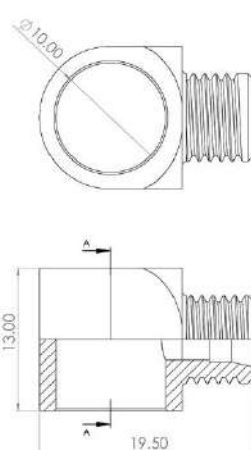
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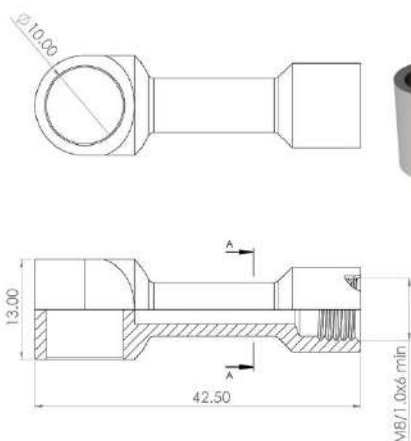
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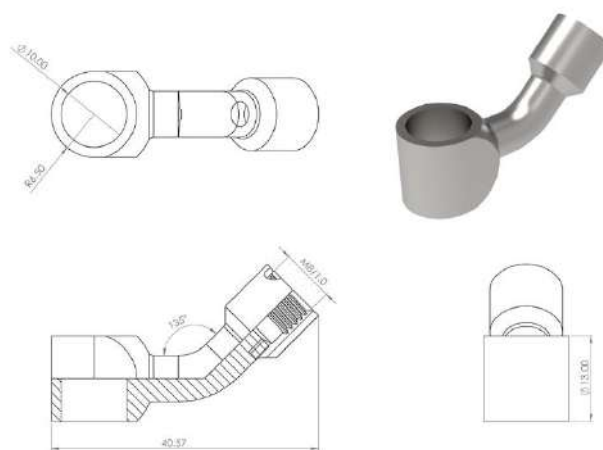
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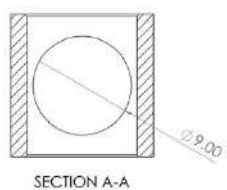
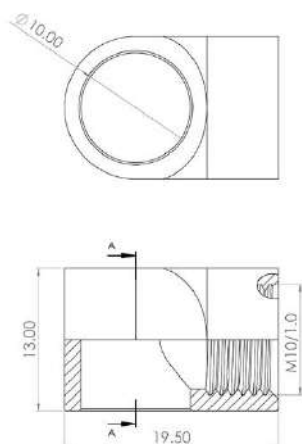
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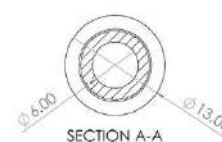
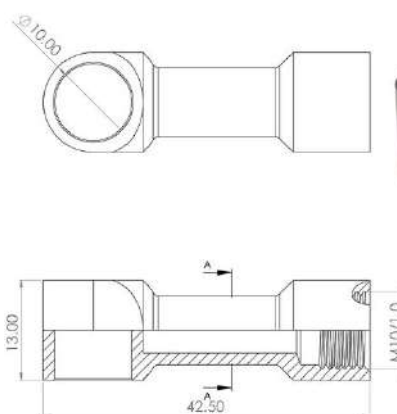
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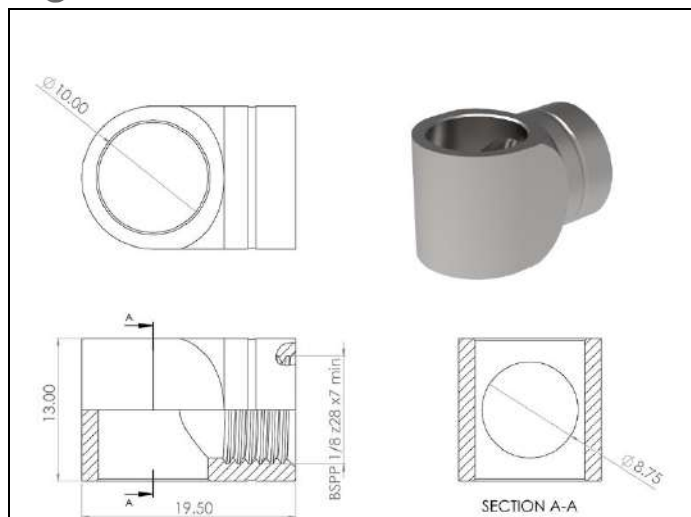
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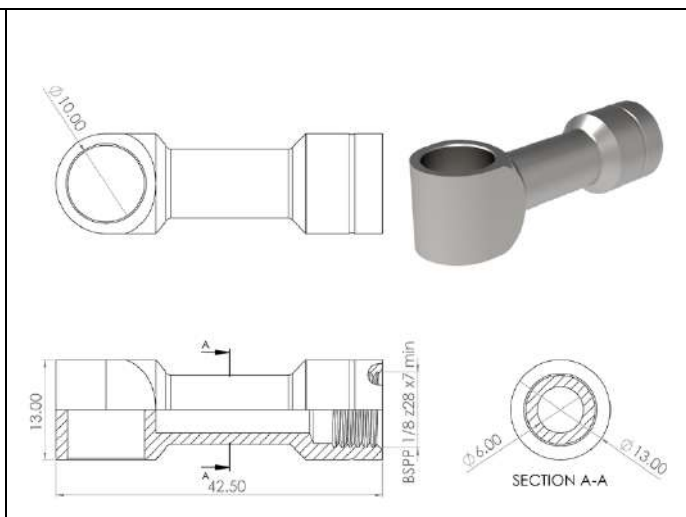
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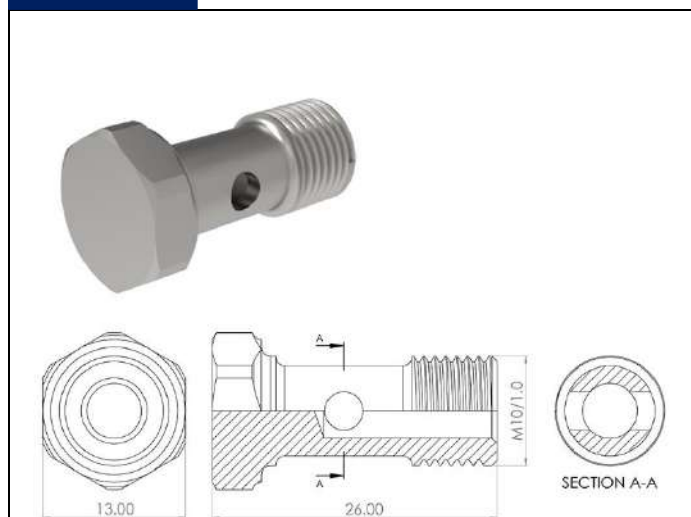
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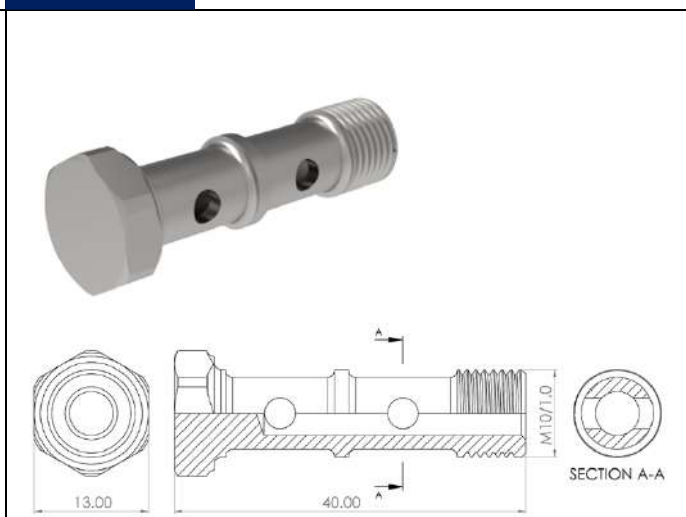
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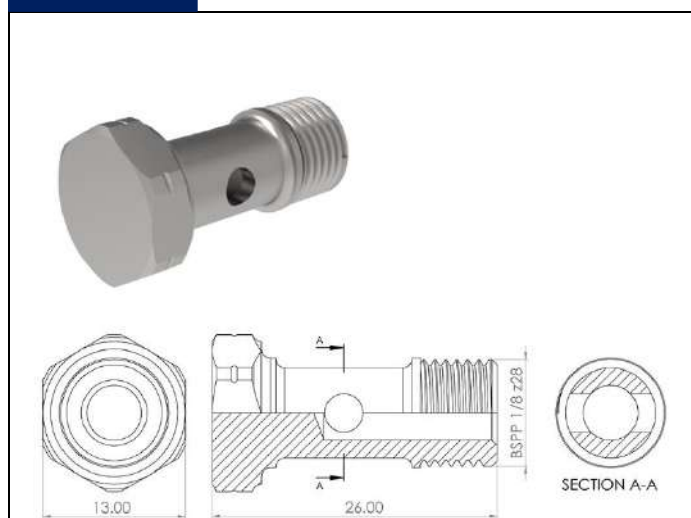
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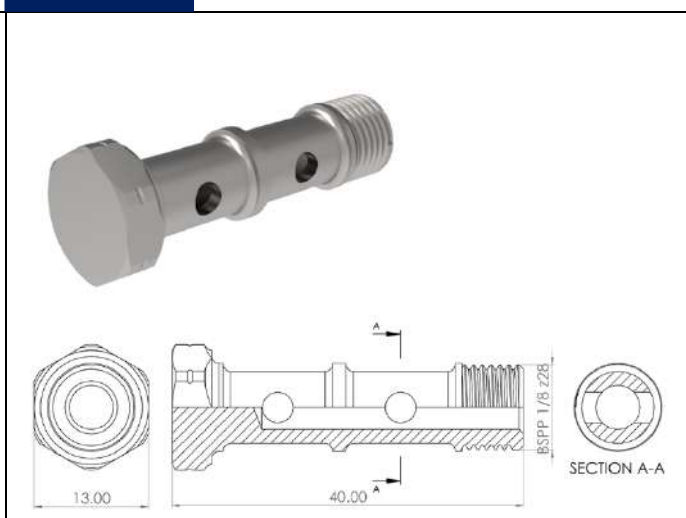
MI-CA-04-15



MI-CA-04-16



MI-CA-04-17

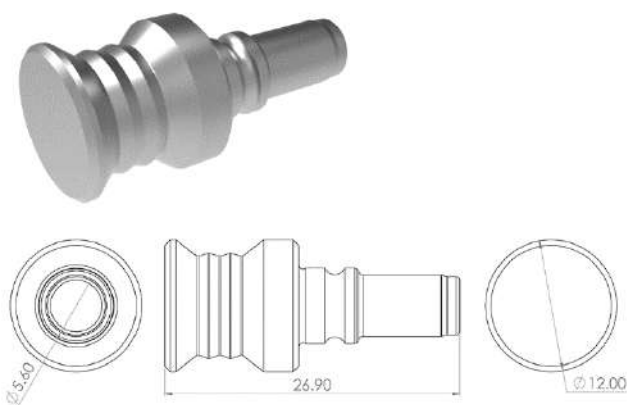
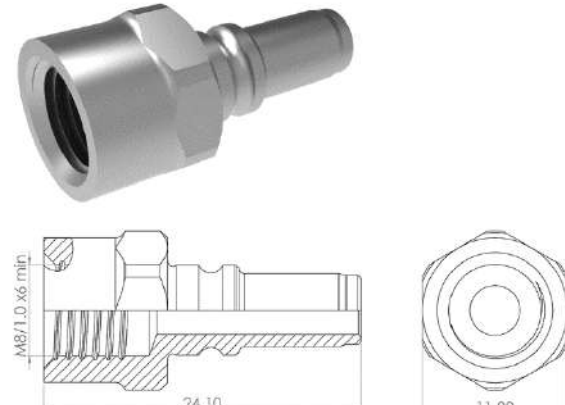
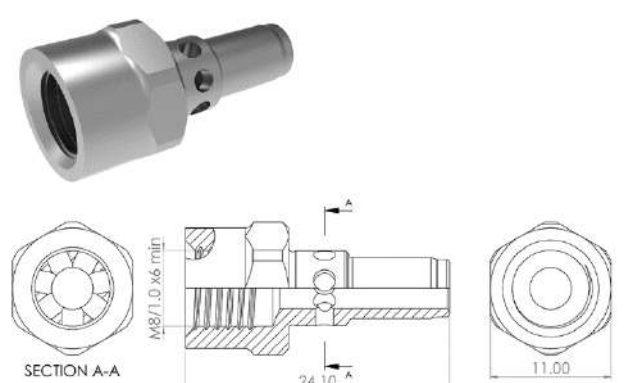
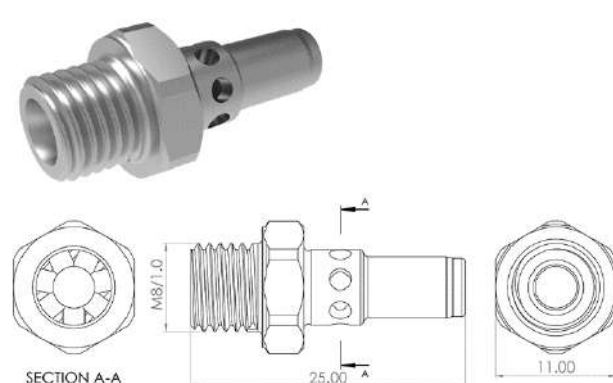


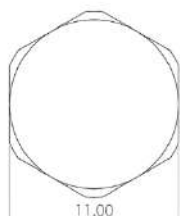
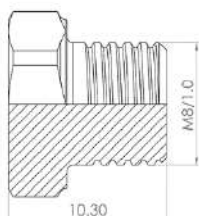
MI-CA-04-18

Locking and connecting plugs:

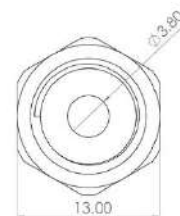
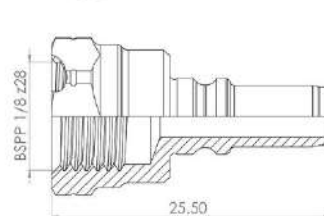
Plugs and locking plugs to connect to the quick connectors. Material: Steel

| Ref. | Description |
|-------------|--|
| MI-CC-01-00 | Sealing plug with quick connection fitting MICRO |
| MI-CC-01-01 | Quick connection fitting MICRO to M8x1(F) |
| MI-CC-01-02 | Non-rotating (positioning) quick connection fitting MICRO to M8x1(F) |
| MI-CC-01-03 | Non-rotating (positioning) quick connection fitting MICRO to M8x1(M) |
| MI-CC-01-04 | Sealing plug M8x1(M) |
| MI-CC-01-05 | Quick connection fitting MICRO to BSP 1/8"(F) |
| MI-CC-01-06 | Sealing plug BSP 1/8"(M) |
| MI-CC-01-07 | Sealing plug BSPT 1/8"(M) |

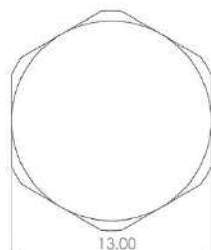
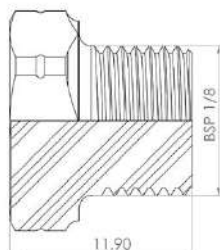
| | |
|---|--|
|  <p>MI-CC-01-00</p> |  <p>MI-CA-01-01</p> |
|  <p>MI-CC-01-02</p> |  <p>MI-CC-01-03</p> |



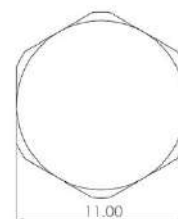
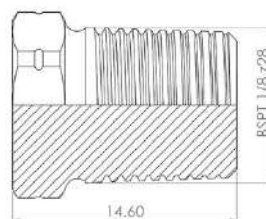
MI-CC-01-04



MI-CC-01-05



MI-CC-01-06



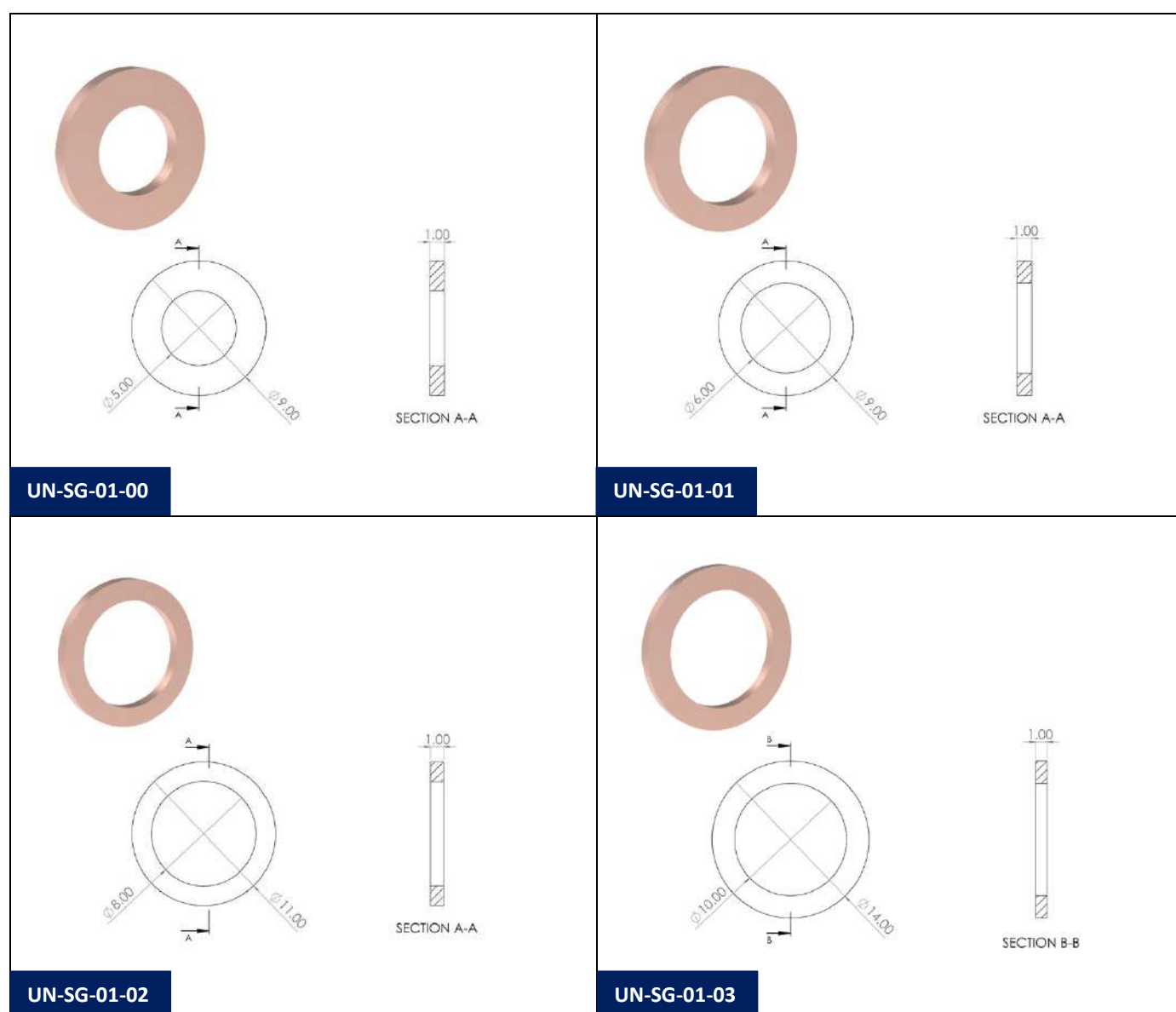
MI-CC-01-07

Sealing gasket:

Guarantees the tightness between the different connecting elements and according to the required diameters. Common to MICRO and NANO program.

Material: Copper.

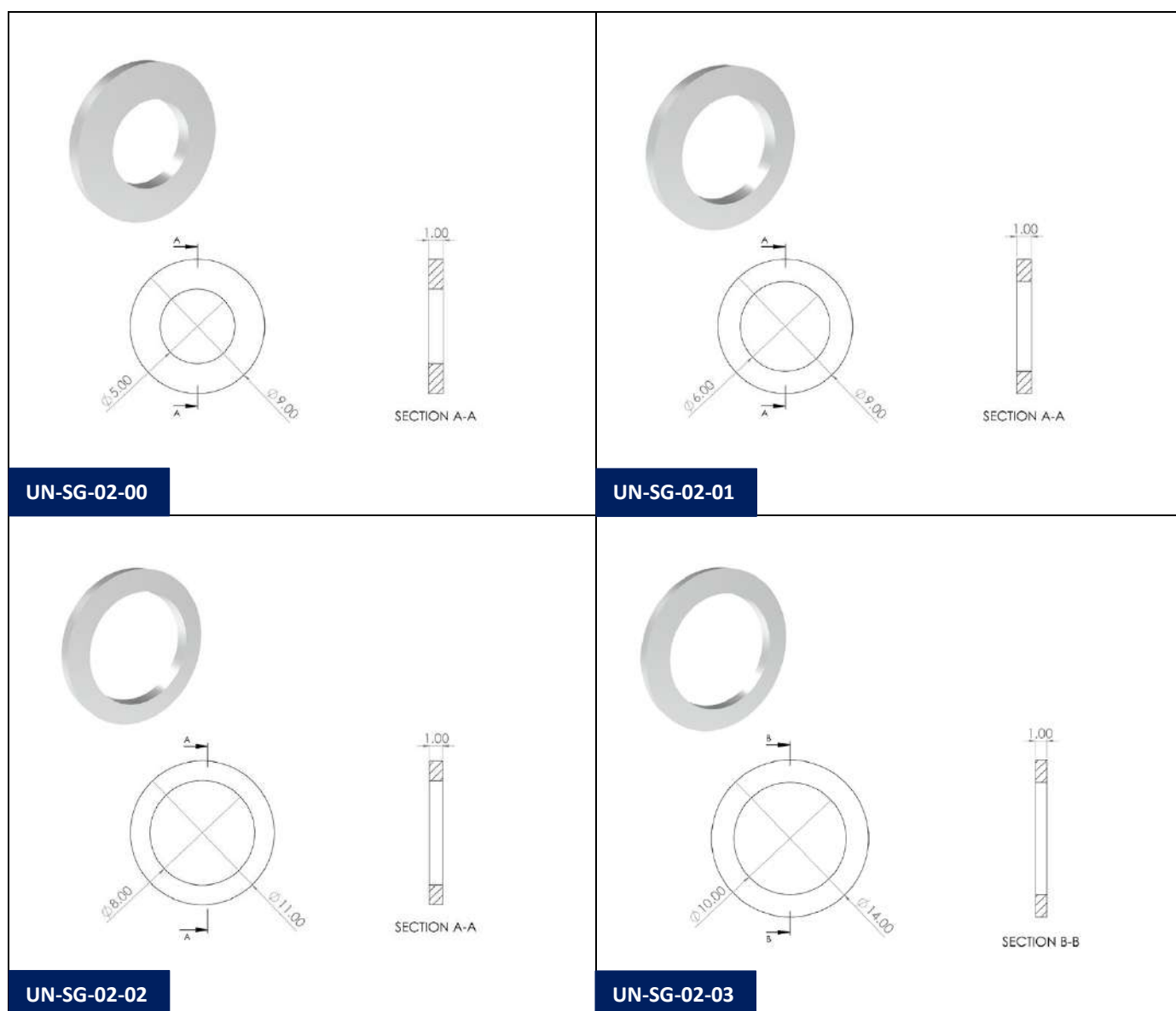
| Ref. | Description |
|-------------|--|
| UN-SG-01-00 | Sealing gasket in copper for M5 (10 units) |
| UN-SG-01-01 | Sealing gasket in copper for M6 (10 units) |
| UN-SG-01-02 | Sealing gasket in copper for M8 (10 units) |
| UN-SG-01-03 | Sealing gasket in copper for M10 and BSP 1/8" (10 units) |



Guarantees the tightness between the different connecting elements and according to the required diameters. Common to MICRO and NANO program.

Material: Aluminum.

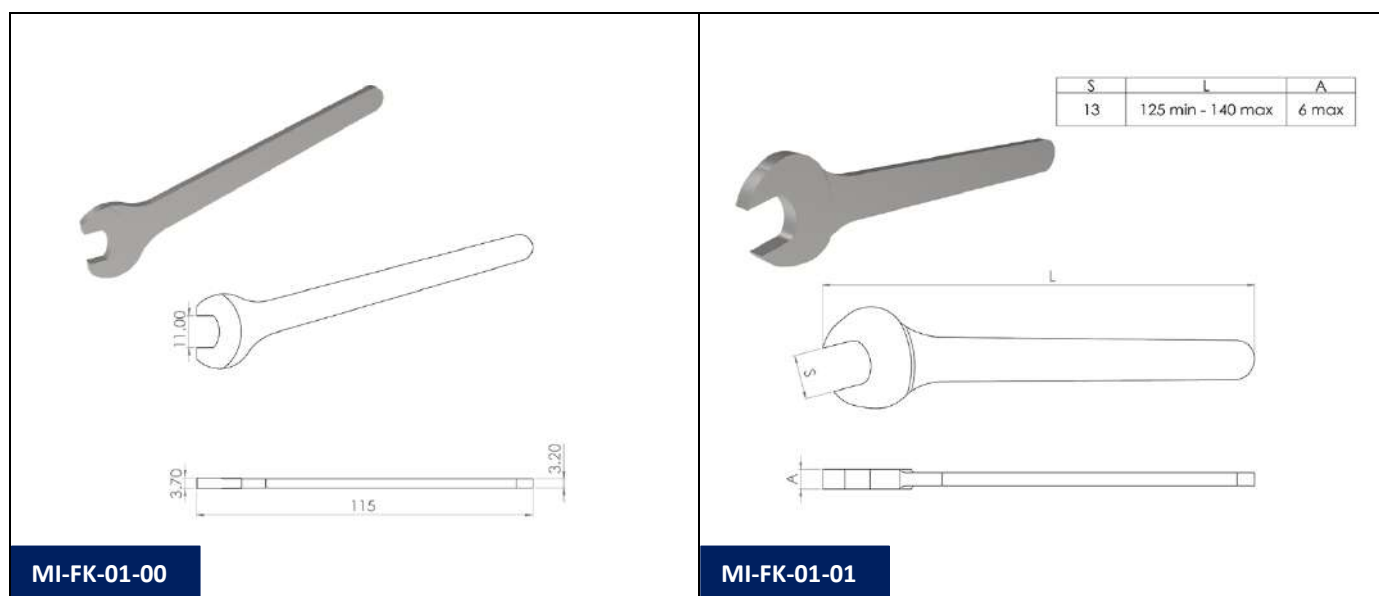
| Ref. | Description |
|-------------|--|
| UN-SG-02-00 | Sealing gasket in aluminum for M5 (10 units) |
| UN-SG-02-01 | Sealing gasket in aluminum for M6 (10 units) |
| UN-SG-02-02 | Sealing gasket in aluminum for M8 (10 units) |
| UN-SG-02-03 | Sealing gasket in aluminum for M10 and BSP 1/8" (10 units) |



Fastening keys for the coolant distribution fittings:

Special wrench for MICRO program assembly. 11 mm between flats.

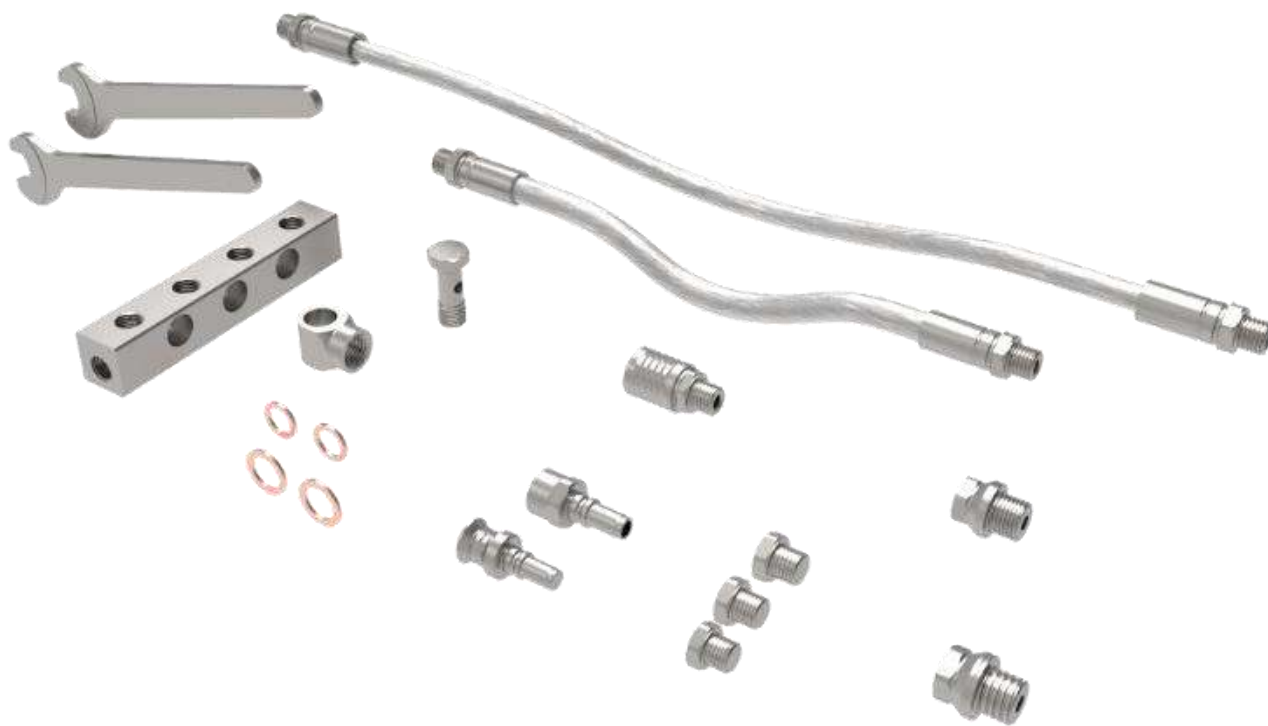
| Ref. | Description |
|-------------|---|
| MI-FK-01-00 | Wrench for assembly on the universal hexagon used in the MICRO program and in some adaptors of the NANO program. SW11 |
| MI-FK-01-01 | Wrench for assembly on hexagon used in some adaptors of the MICRO program. SW13 |



Starter kit:

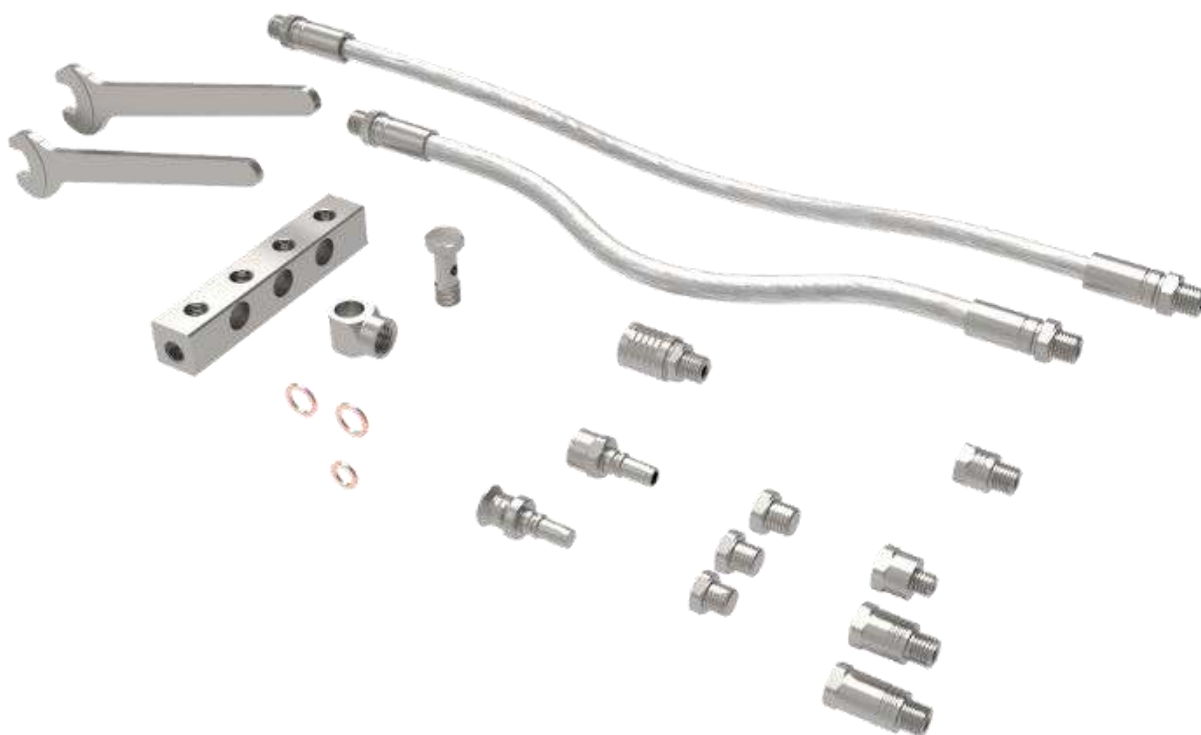
Set of components to start and become familiar with the SCS Coolant Distribution System MICRO program. Basic set of components delivered in a basic kit for the most typical applications.

| Ref. | Description |
|-------------|--|
| MI-SK-01-00 | <p>Basic Kit Drilling/Boring MICRO: For collet tool holder or round shank tool</p> <p>Quick Connection fittings: 1 unit MI-QC-01-00 Quick connection fitting MICRO with M8x1(M) on one end.</p> <p>Distribution tubes: 1 unit MI-DT-01-01 M8x1(M), flexible tube OD:8 mm, 8" (203 mm), M8x1(M) 1 unit MI-DT-01-02 M8x1(M), flexible tube OD:8 mm, 12" (305 mm), M8x1(M)</p> <p>Standard coolant distribution block: 1 unit 15x15x83 mm block with coolant inlet in M8x1(F) inlet and 4 outlets in M8x1(F) in one of the faces. Includes supporting plate to machine with 3 Fastening slotted holes for M6 screw. Reversible mounting position.</p> <p>Connectors and adaptors: 1 unit MI-CA-01-00 M8x1(F) to BSP 1/8"(M) 1 unit MI-CA-01-01 M8x1(F) to M10x1(M) 1 unit MI-CA-04-00 Short banjo M8x1(F) 1 unit MI-CA-04-04 Banjo bolt M8x1(M)</p> <p>Locking and connecting plugs: 1 unit MI-CC-01-00 Sealing plug with quick connection fitting 1 unit MI-CC-01-01 Quick connection fitting MICRO to M8x1(F) 3 units MI-CC-01-04 Sealing plug M8x1(M)</p> <p>Sealing gasket: 2 units UN-SG-01-02 Sealing gasket in copper for M8 (10 units) 1 unit UN-SG-01-03 Sealing gasket in copper for M10 and BSP 1/8" (10 units)</p> <p>Fastening keys for the coolant distribution fittings: 2 units MI-FK-01-00 Wrench for assembly on the universal hexagon used in the MICRO program. SW11</p> |



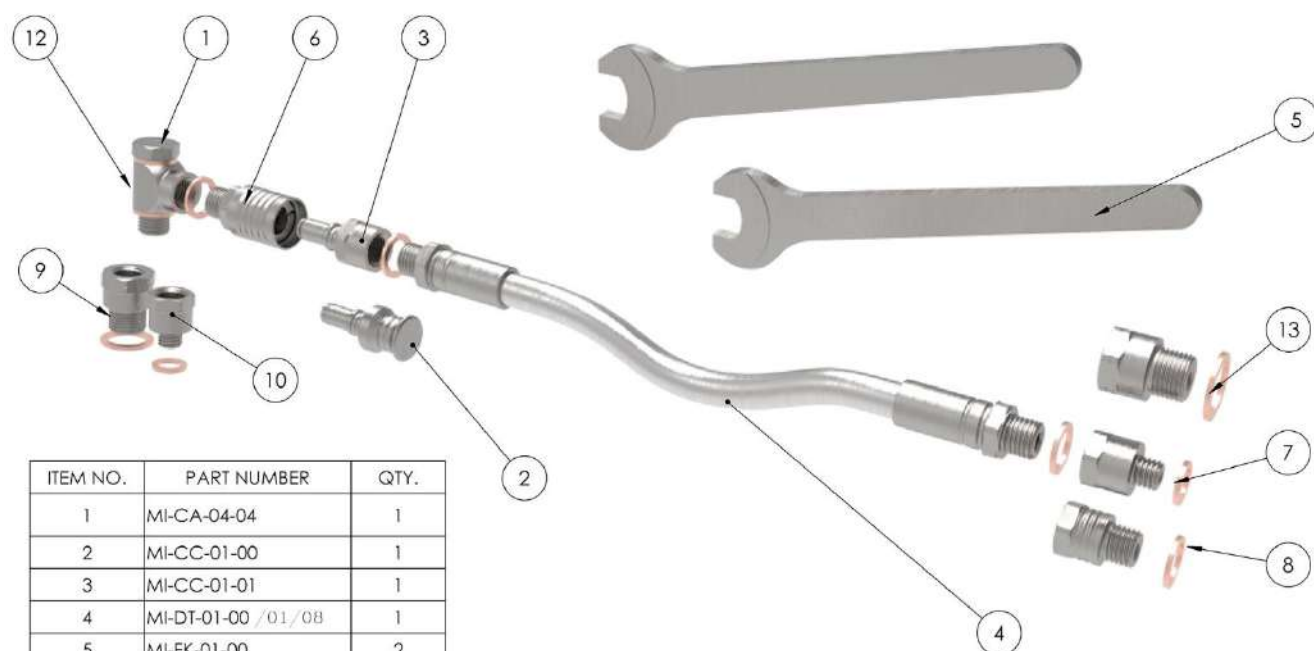
MI-SK-01-00

| Ref. | Description |
|-------------|---|
| MI-SK-01-01 | <p>Basic Kit Turning/Grooving/Cut off MICRO: For square shank tool holders</p> <p>Quick Connection fittings: 1 unit MI-QC-01-00 Quick connection fitting MICRO with M8x1(M) on one end.</p> <p>Distribution tubes: 1 unit MI-DT-01-01 M8x1(M), flexible tube OD:8 mm, 8" (203 mm), M8x1(M) 1 unit MI-DT-01-02 M8x1(M), flexible tube OD:8 mm, 12" (305 mm), M8x1(M)</p> <p>Standard coolant distribution block: 1 unit 15x15x83 mm block with coolant inlet in M8x1(F) inlet and 4 outlets in M8x1(F) in one of the faces. Includes supporting plate to machine with 3 Fastening slotted holes for M6 screw. Reversible mounting position.</p> <p>Connectors and adaptors: 1 unit MI-CA-01-06 M8x1(F) to M6x1(M) 1 unit MI-CA-03-00 Spacer H:10 mm M8x1(M) - M8x1(F) 1 unit MI-CA-03-01 Spacer H:15 mm M8x1(M) - M8x1(F) 1 unit MI-CA-03-02 Spacer H:20 mm M8x1(M) - M8x1(F) 1 unit MI-CA-04-00 Short banjo M8x1(F) 1 unit MI-CA-04-04 Banjo bolt M8x1(M)</p> <p>Locking and connecting plugs: 1 unit MI-CC-01-00 Sealing plug with quick connection fitting MICRO 1 unit MI-CC-01-01 Quick connection fitting MICRO to M8x1(F) 3 unit CC-01-04 Sealing plug M8x1(M)</p> <p>Sealing gasket: 1 unit UN-SG-01-01 2 unit SG-01-02 Sealing gasket in copper for M6 (10 units) 2 unit UN-SG-01-02 Sealing gasket in copper for M8 (10 units)</p> <p>Fastening keys for the coolant distribution fittings: 2 units MI-FK-01-00 Wrench for assembly on the universal hexagon used in the MICRO program. SW11</p> |



MI-SK-01-01

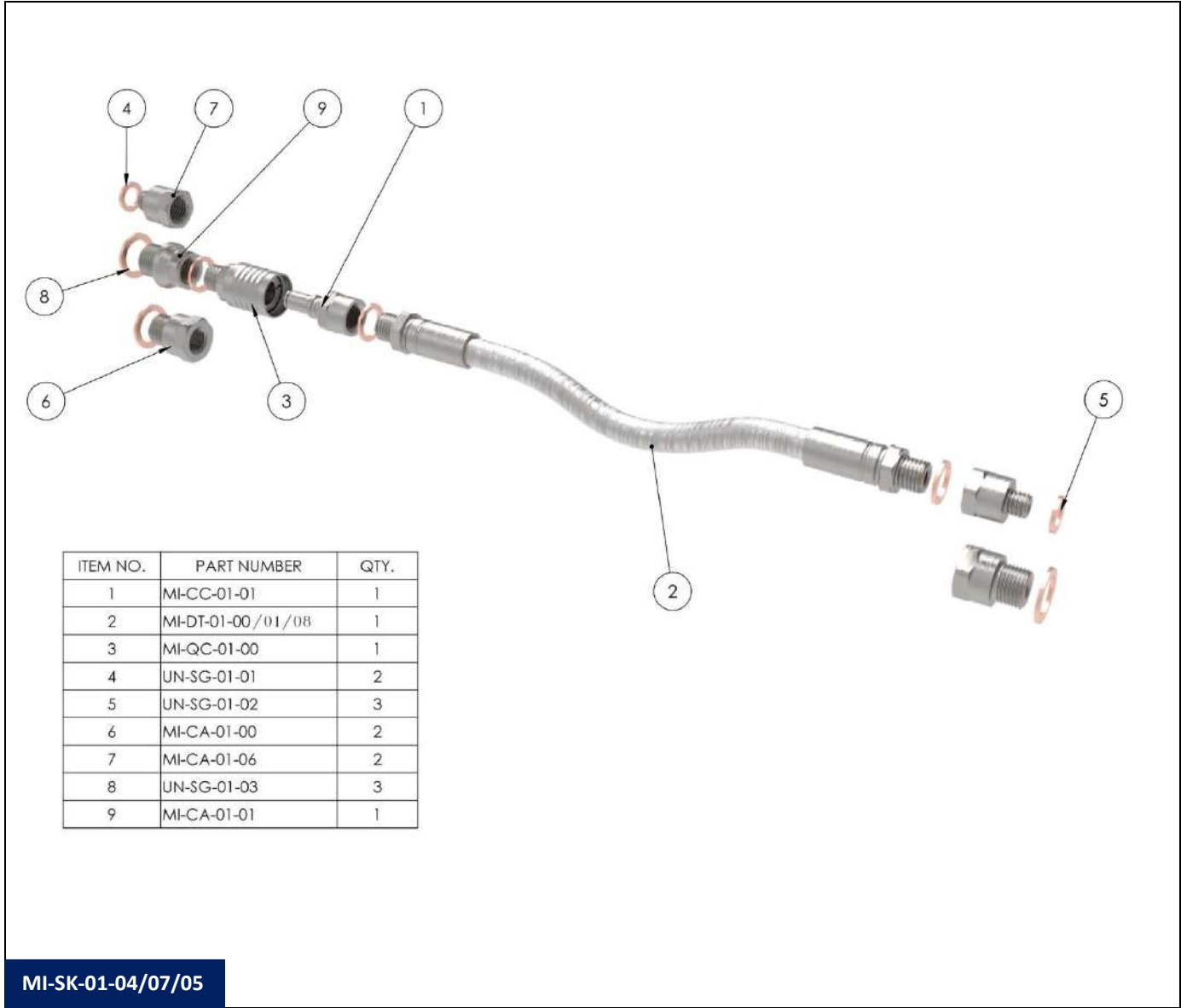
| Ref. | Description |
|------------------------------------|--|
| | <p>Basic starter kit MICRO for 1 tool with flexible tube 102 or 152 or 203 and banjo. Assembled.</p> <p>Quick Connection fittings: 1 unit MI-QC-01-00 Quick connection fitting MICRO with M8x1(M) on one end.</p> <p>Flexible distribution tubes: 1 unit MI-DT-01-00 or 01 or 08 M8x1(M), flexible tube OD:8 mm, L:4" or 6" or 8" (102 or 152 or 203 mm), M8x1(M)</p> <p>Connectors and adaptors: 2 units MI-CA-01-00 Adaptor M8x1(H) to BSP 1/8"(M) 2 units MI-CA-01-06 Adaptor M8x1(H) to M6x1(M) 1 unit MI-CA-03-00 Spacer H:10 mm M8x1(M)-M8x1(F) 1 unit MI-CA-04-00 Short banjo M8x1(F) 1 unit MI-CA-04-04 Banjo bolt M8x1(M)</p> <p>Locking and connecting plugs: 1 unit MI-CC-01-00 Sealing plug with quick connection fitting MICRO 1 unit MI-CC-01-01 Quick connection fitting MICRO to M8x1(F)</p> <p>Sealing gaskets: 0.2 unit UN-SG-01-01 Sealing gasket in copper for M6 (10 units) 0.6 units UN-SG-01-02 Sealing gasket in copper for M8 (10 units) 0.2 units UN-SG-01-03 Sealing gasket in copper for M10 y BSP 1/8" (10 unid.)</p> <p>Fastening wrenches for the fittings: 2 units MI-FK-01-00 Wrench for assembly on the universal hexagon used in the MICRO program. SW11</p> |
| MI-SK-01-02 (102 mm flex. tube) | |
| MI-SK-01-06 (152 mm flex. tube) | |
| MI-SK-01-03 (203 mm flex. tube) | |



| ITEM NO. | PART NUMBER | QTY. |
|----------|-----------------------|------|
| 1 | MI-CA-04-04 | 1 |
| 2 | MI-CC-01-00 | 1 |
| 3 | MI-CC-01-01 | 1 |
| 4 | MI-DT-01-00 / 01 / 08 | 1 |
| 5 | MI-FK-01-00 | 2 |
| 6 | MI-QC-01-00 | 1 |
| 7 | UN-SG-01-01 | 2 |
| 8 | UN-SG-01-02 | 6 |
| 9 | MI-CA-01-00 | 2 |
| 10 | MI-CA-01-06 | 2 |
| 11 | MI-CA-03-00 | 1 |
| 12 | MI-CA-04-00 | 1 |
| 13 | UN-SG-01-03 | 2 |

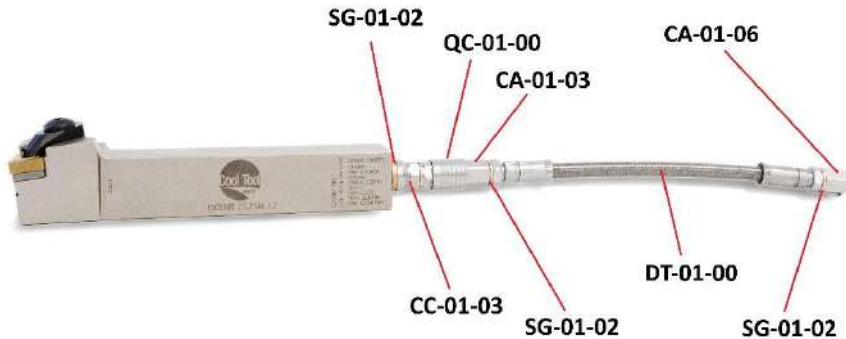
MI-SK-01-02/06/03

| Ref. | Description |
|------------------------------------|--|
| | <p>Kit MICRO flexible tube 102 or 152 or 203 with quick connection fitting. Assembled.</p> <p>Quick Connection fittings: 1 unit MI-QC-01-00 Quick connection fitting MICRO with M8x1(M) on one end.</p> <p>Flexible distribution tubes: 1 unit MI-DT-01-00 or 01 or 08 M8x1(M), flexible tube OD:8 mm, L:4" or 6" or 8" (102 or 152 or 203 mm), M8x1(M)</p> <p>Connectors and adaptors: 2 units MI-CA-01-00 Adaptor M8x1(F) to BSP 1/8"(M) 2 units MI-CA-01-06 Adaptor M8x1(H) to M6x1(M) 1 units MI-CA-01-01 Adaptor M8x1(H) to M10x1(M)</p> <p>Locking and connecting plugs: 1 unit MI-CC-01-01 Quick connection fitting MICRO to M8x1(F)</p> <p>Sealing gaskets: 0.2 unit UN-SG-01-01 Sealing gasket in copper for M6 (10 units) 0.3 unit UN-SG-01-02 Sealing gasket in copper for M8 (10 units) 0.3 units UN-SG-01-03 Sealing gasket in copper for M10 & BSP 1/8" (10 units)</p> |
| MI-SK-01-04 (102 mm flex. tube) | |
| MI-SK-01-07 (152 mm flex. tube) | |
| MI-SK-01-05 (203 mm flex. tube) | |



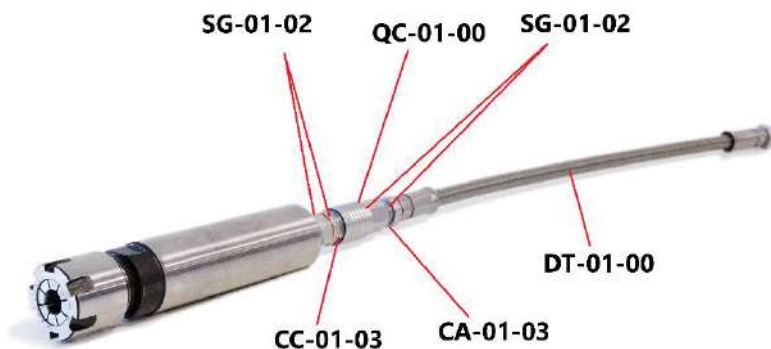
ASSEMBLY EXAMPLES:

Turning tool holder with quick connection and flexible tube of 102 mm.



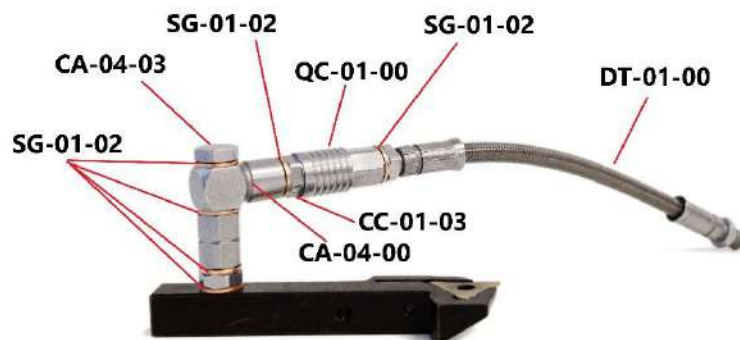
- UN-SG-01-02: Sealing gasket in copper for M8
- MI-CC-01-03: Non-rotating (positioning) quick connection fitting M8x1(M)
- MI-QC-01-00: Quick connection fitting MICRO with M8x1(M) on one end.
- MI-CA-01-03: Adaptor M8x1(F) to M8x1(F)
- MI-DT-01-00: Flexible distribution tube 102 mm M8x1(M) on each end
- MI-CA-01-06: Adaptor M8x1(F) to M6x1(M)

Collet sleeve with quick connection and flexible tube 102 mm.



- UN-SG-01-02: Sealing gasket for M8
- MI-CC-01-03: Non-rotating (positioning) quick connection fitting M8x1(M)
- MI-QC-01-00: Quick connection fitting MICRO with M8x1(M) on one end.
- MI-CA-01-03: Adaptor M8x1(F) to M8x1(F)
- MI-DT-01-00: Flexible distribution tube 102 mm M8x1(M) on each end

Tool holder with banjo, quick connection and flexible tube 102 mm.



UN-SG-01-02: Sealing gasket for M8

MI-CC-01-03: Non-rotating (positioning) quick connection fitting M8x1(M)

MI-QC-01-00: Quick connection fitting MICRO with M8x1(M) on one end.

MI-CA-04-04: Banjo bolt M8x1(M)

MI-CA-04-00: Short banjo M8x1(F)

MI-DT-01-00: Flexible distribution tube 102 mm M8x1(M) on each end

NANO PROGRAM

The inner diameter of the NANO program is 2.3 mm and is ideal for installation with ER-11 collet tool holders, small cylindrical shank tool holders (OD< 16 mm) or with square shank tool holders 12x12 mm, 10x10 mm or 8x8 mm.

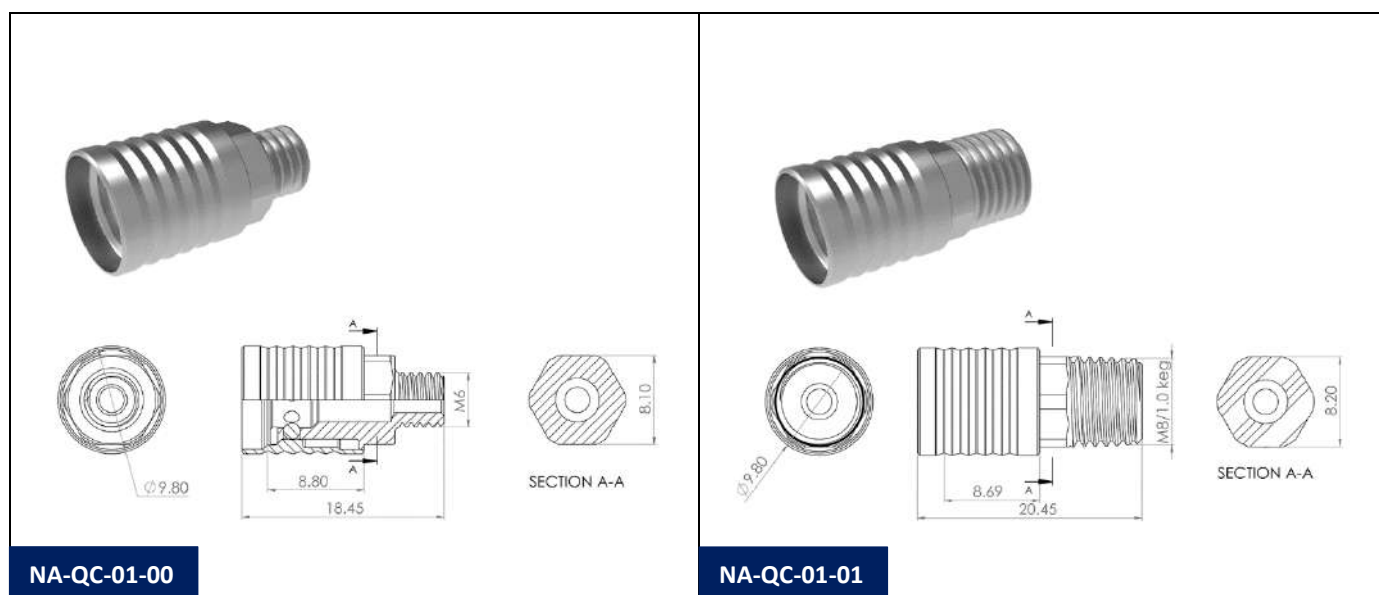
Quick connection fittings:

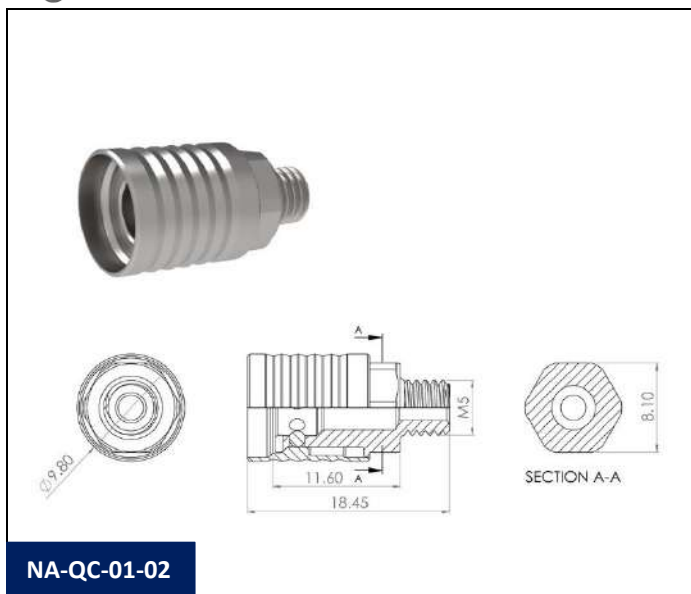
Quick connection fittings with ultra-compact dimensions OD:9.8 mm, ID:2.3 mm, Length:11.4 mm.

Material: Steel

Maximum pressure:220 Bar (3.190 PSI)

| Ref. | Description |
|-------------|--|
| NA-QC-01-00 | Quick connection fitting NANO with M6x1(M) on one end. |
| NA-QC-01-01 | Quick connection fitting NANO with M8x1 keg(M) on one end. |
| NA-QC-01-02 | Quick connection fitting NANO with M5x0.8(M) on one end. |





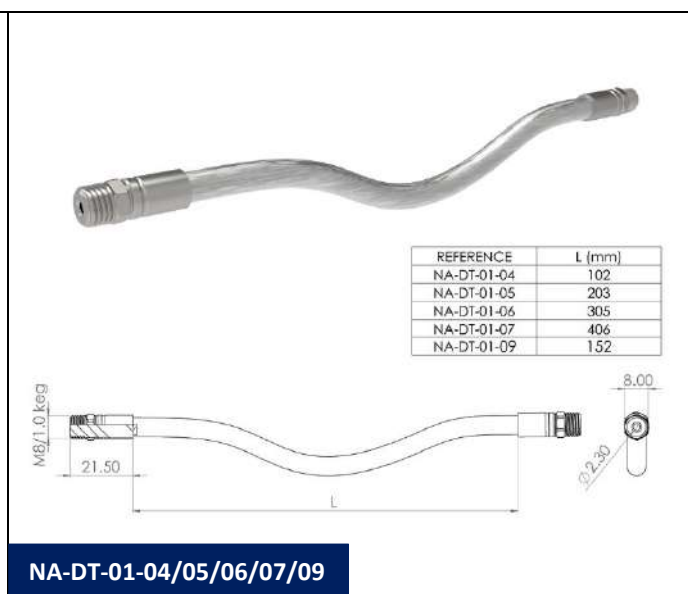
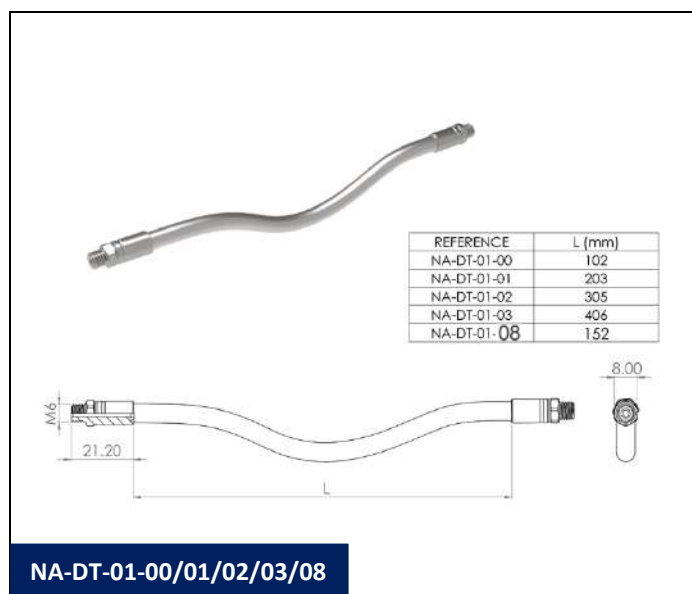
Distribution tubes:

Set of distribution tubes in Teflon covered in braided stainless steel AISI 304. OD:6.5 mm. ID:2.3 mm.
M6x1(M) thread in each extreme. Material: Steel

Minimum bending radius: 15 mm

Maximum pressure: 220 Bar (3.190 PSI)

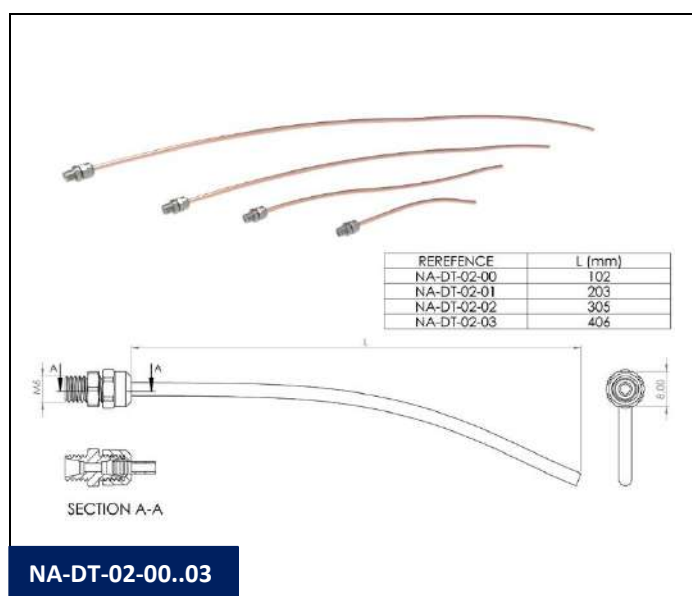
| Ref. | Description |
|-------------|---|
| NA-DT-01-00 | M6x1(M), flexible tube OD:6.5 mm, L:4" (102 mm), M6x1(M) |
| NA-DT-01-08 | M6x1(M), flexible tube OD:6.5 mm, L:6" (152 mm), M6x1(M) |
| NA-DT-01-01 | M6x1(M), flexible tube OD:6.5 mm, L:8" (203 mm), M6x1(M) |
| NA-DT-01-02 | M6x1(M), flexible tube OD:6.5 mm, L:12" (305 mm), M6x1(M) |
| NA-DT-01-03 | M6x1(M), flexible tube OD:6.5 mm, L:16" (406 mm), M6x1(M) |
| NA-DT-01-04 | M8x1 keg(M), flexible tube OD:6.5 mm, L:4" (102 mm), M8x1 keg(M) |
| NA-DT-01-08 | M8x1 keg(M), flexible tube OD:6.5 mm, L:6" (152 mm), M8x1 keg(M) |
| NA-DT-01-05 | M8x1 keg(M), flexible tube OD:6.5 mm, L:8" (203 mm), M8x1 keg(M) |
| NA-DT-01-06 | M8x1 keg(M), flexible tube OD:6.5 mm, L:12" (305 mm), M8x1 keg(M) |
| NA-DT-01-07 | M8x1 keg(M), flexible tube OD:6.5 mm, L:16" (406 mm), M8x1 keg(M) |



Copper distribution tubes OD:3 mm, ID:1 mm, with M6x1(M) thread on one end and coupling to the copper tube with sealing ring ID:3 mm.

Maximum pressure: 220 Bar (3.190 PSI)

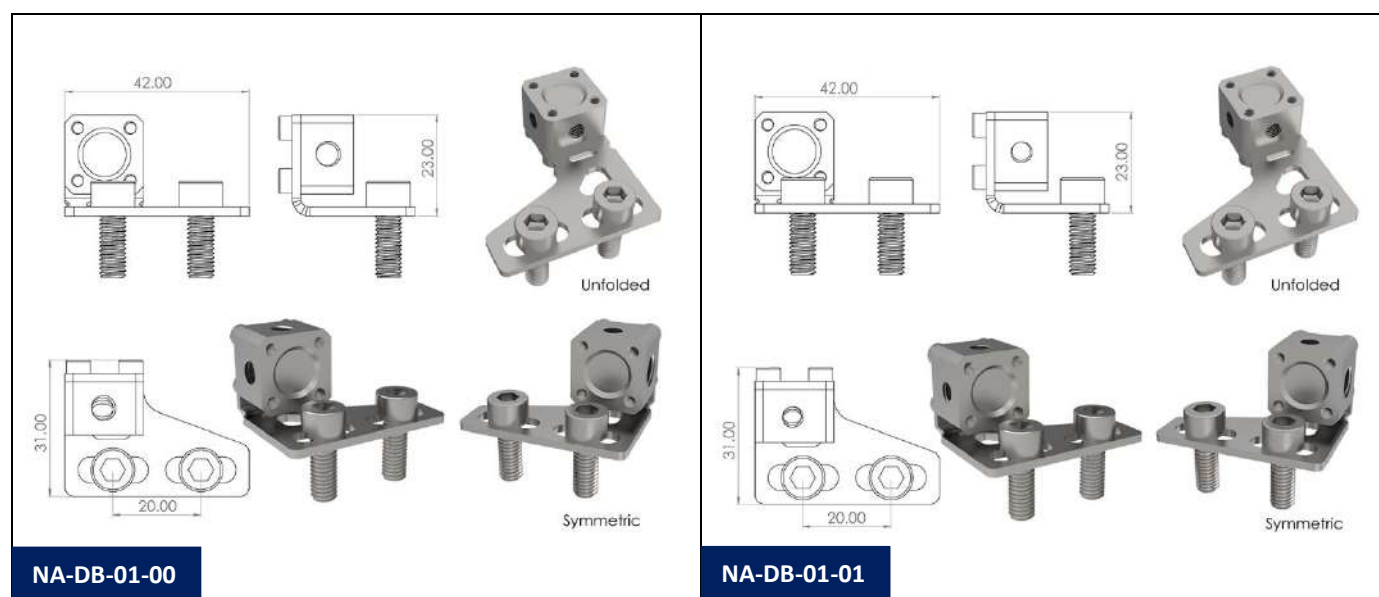
| Ref. | Description |
|-------------|---|
| NA-DT-02-00 | M6x1(M) with sealing ring, copper tube OD:3 mm and L:4" (102 mm), open end tube. |
| NA-DT-02-01 | M6x1(M) with sealing ring, copper tube OD:3 mm and L:8" (203 mm), open end tube. |
| NA-DT-02-02 | M6x1(M) with sealing ring, copper tube OD:3 mm and L:12" (305 mm), open end tube. |
| NA-DT-02-03 | M6x1(M) with sealing ring, copper tube OD:3 mm and L:16" (406 mm), open end tube. |

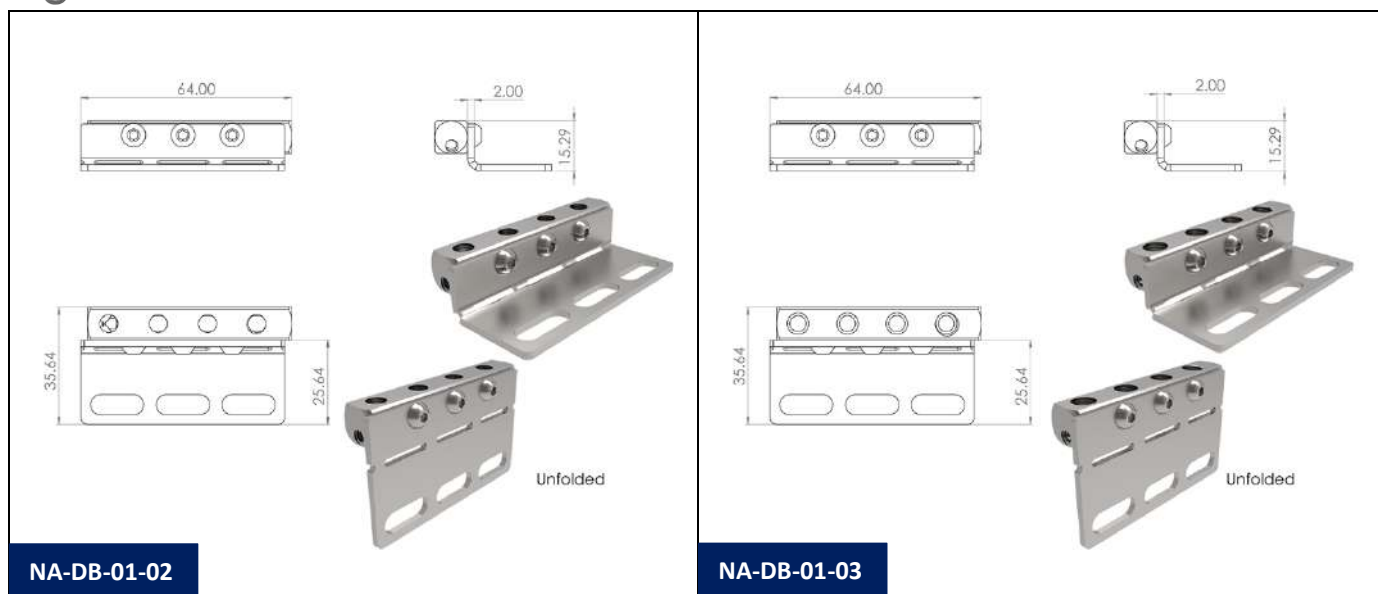


Standard coolant distribution blocks:

Compact and space saving design. Inlet M8x1(F) or M6x1(F) and outlets M6x1(F) or M5x0.8(F).
Material: Steel

| Ref. | Description |
|-------------|---|
| NA-DB-01-00 | 18x18x12 mm distribution block with coolant inlet in M8x1(F) inlet and 3 outlets in M6x1(F). Includes supporting plate to machine with 3 Fastening slotted holes for M6 screw. |
| NA-DB-01-01 | 18x18x12 mm distribution block with coolant inlet in M8x1(F) and 3 outlets in M5x0.8(F). Includes supporting plate to machine with 3 Fastening slotted holes for M6 screw. |
| MI-DB-01-02 | 10x10x62 mm block with coolant inlet in M6x1(F) inlet and 4 outlets in M6x1(F) in one of the faces. Includes supporting plate to machine with 3 Fastening slotted holes for M6 screw. Reversible mounting position. |
| MI-DB-01-03 | 10x10x62 mm block with coolant inlet in M6x1(F) inlet and 4 outlets in M5x0.8(F) in one of the faces. Includes supporting plate to machine with 3 Fastening slotted holes for M6 screw. Reversible mounting position. |



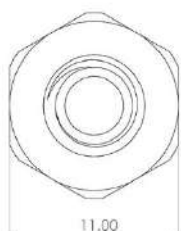
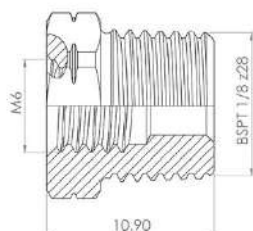


Connectors and adaptors:

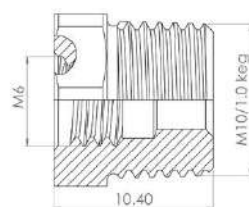
To adapt connection tubes and quick connectors.

Material: Steel

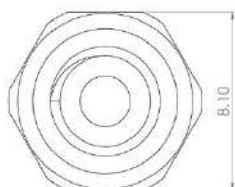
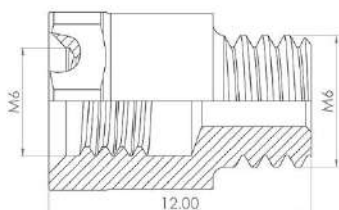
| Ref. | Description |
|-------------|--|
| NA-CA-01-00 | M6x1(F) to BSPT 1/8"(M) |
| NA-CA-01-01 | M6x1(F) to M10x1 keg(M) |
| NA-CA-01-02 | M6x1(F) to M6x1(M) |
| NA-CA-01-03 | M6x1(F) to M6x1(F) |
| NA-CA-01-04 | Nut for sealing ring ID:3 mm SW8 |
| NA-CA-01-05 | M6x1(F) to M5x0.8(M) |
| NA-CA-01-06 | M6x1(F) to M8x1(M) |
| NA-CA-01-07 | M6x1(M) to M6x1(M). Also used for cutting ring ID:3 mm SW8 |
| NA-CA-01-08 | M6x1(F) to M8x1 keg(M) |
| NA-CA-01-09 | M5x0.8(F) to BSPT 1/8"(M) |
| NA-CA-01-10 | M6x1(F) to NPT 1/8"(M) |
| NA-CA-02-00 | Sealing ring ID:3 mm. |
| NA-CA-03-00 | Spacer H:8 mm M6x1(M)-M6x1(F) |
| NA-CA-03-01 | Spacer H:13 mm M6x1(M)-M6x1(F) |
| NA-CA-03-02 | Spacer H:18 mm M6x1(M)-M6x1(F) |
| NA-CA-03-03 | Spacer H:7 mm M5x0.8(M)-M5x0.8(F) |
| NA-CA-03-04 | Spacer H:12 mm M5x0.8(M)-M5x0.8(F) |
| NA-CA-03-05 | Spacer H:17 mm M5x0.8(M)-M5x0.8(F) |
| NA-CA-04-00 | Short banjo M6x1(F) (does not include banjo bolt) |
| NA-CA-04-01 | Short banjo M6x1(M) (does not include banjo bolt) |
| NA-CA-04-02 | Long straight banjo M6x1(F) (does not include banjo bolt) |
| NA-CA-04-03 | Long curved banjo M6x1(F) (does not include banjo bolt) |
| NA-CA-04-04 | Banjo bolt M6x1(M) |
| NA-CA-04-05 | Banjo bolt double length M6x1(M) to connect 2 Banjos |
| NA-CA-04-06 | Banjo bolt M5x0.8(M) |
| NA-CA-04-06 | Tornillo de paso para banjo M5x0,8(M) |



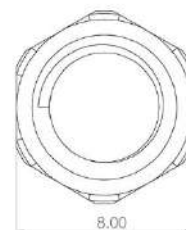
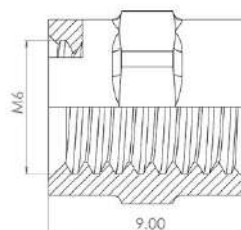
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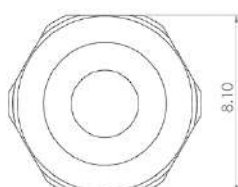
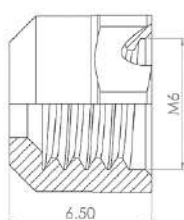
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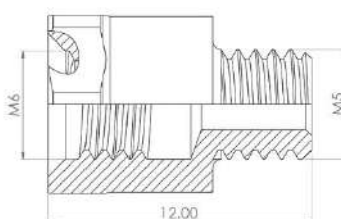
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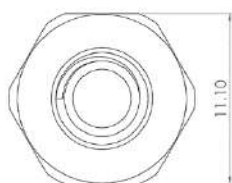
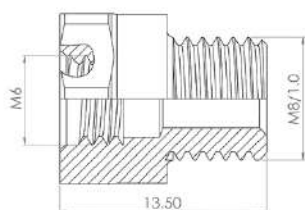
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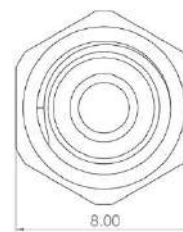
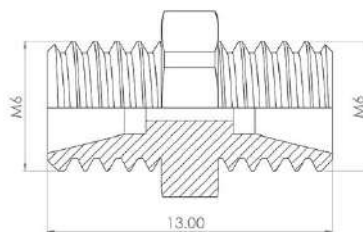
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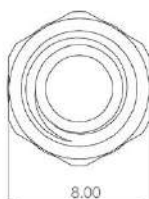
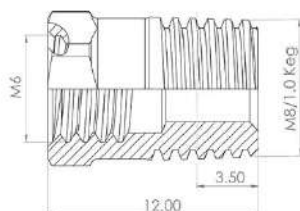
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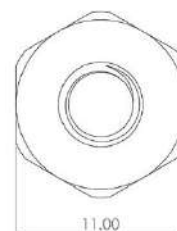
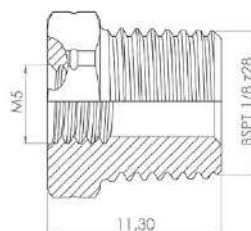
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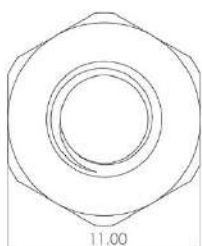
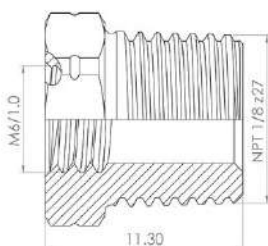
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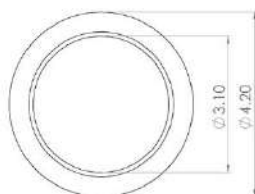
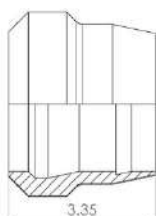
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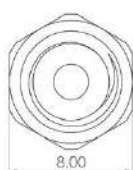
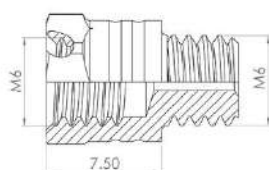
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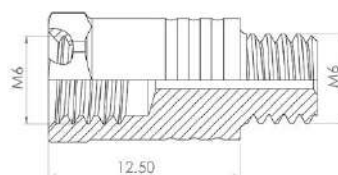
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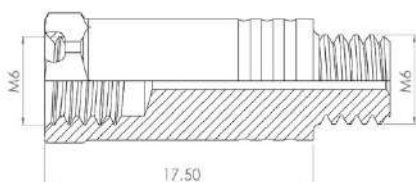
NA-CA-02-00



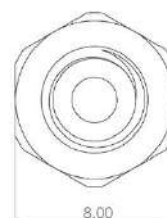
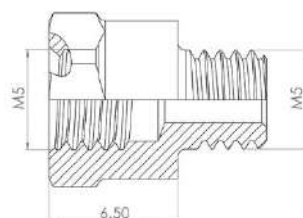
NA-CA-03-00



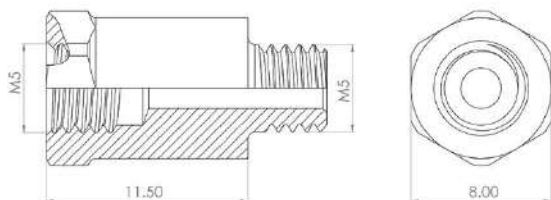
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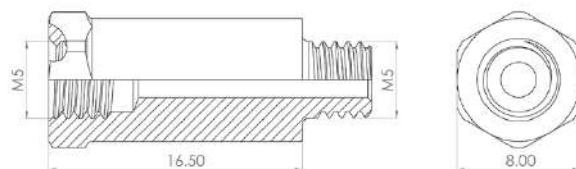
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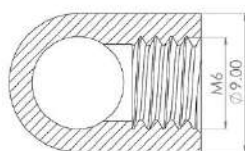
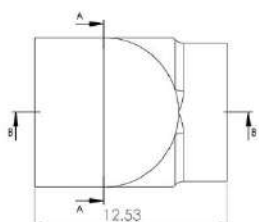
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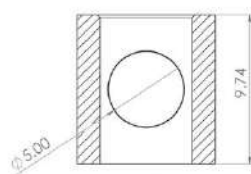
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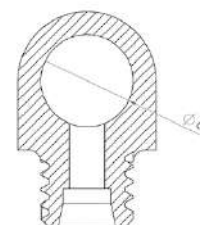
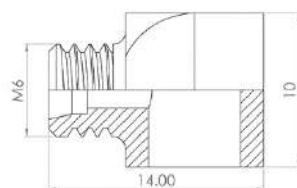


SECTION B-B

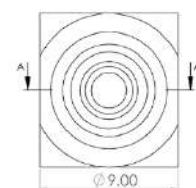


SECTION A-A

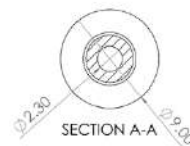
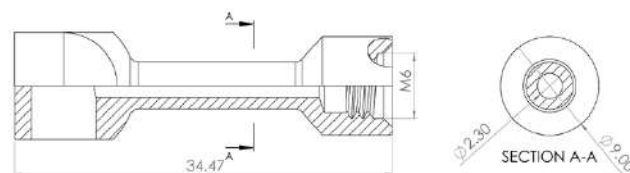
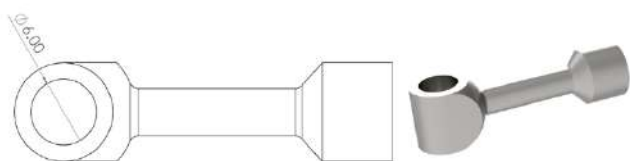
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SECTION A-A

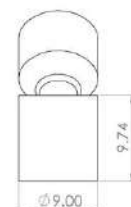
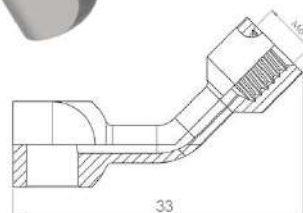


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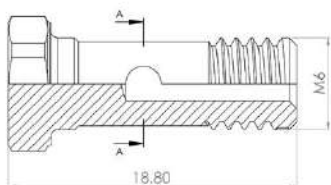
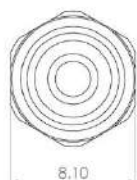


SECTION A-A

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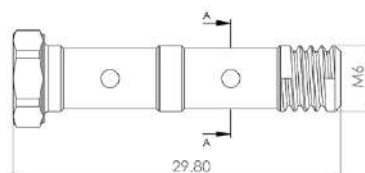


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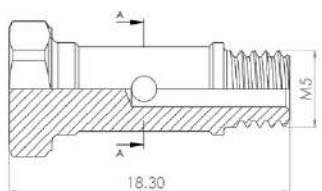
SECTION A-A

NA-CA-04-04



SECTION A-A

NA-CA-04-05



SECTION A-A

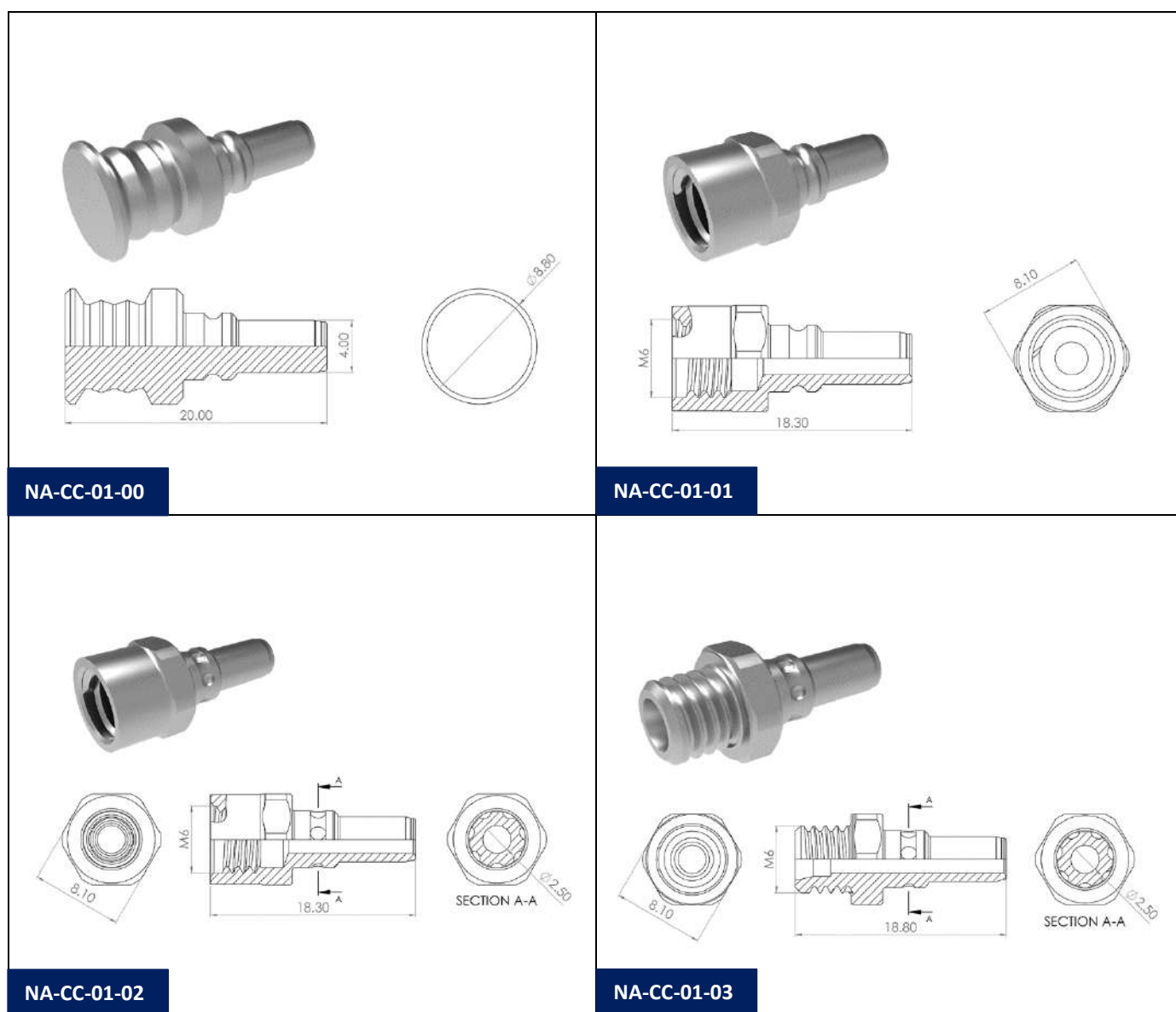
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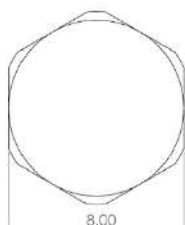
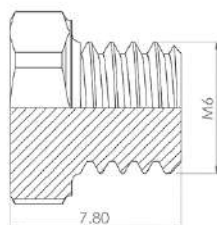
Locking and connecting plugs:

Plugs and locking plugs to connect to the quick connectors.

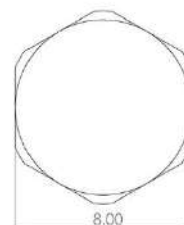
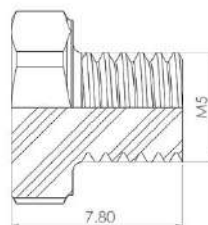
Material: Steel

| Ref. | Description |
|-------------|---|
| NA-CC-01-00 | Sealing plug with quick connection fitting NANO |
| NA-CC-01-01 | Quick connection fitting NANO to M6x1(F) |
| NA-CC-01-02 | Non-rotating (positioning) quick connection fitting NANO to M6x1(F) |
| NA-CC-01-03 | Non-rotating (positioning) quick connection fitting NANO to M6x1(M) |
| NA-CC-01-04 | Sealing plug M6x1(M) |
| NA-CC-01-05 | Sealing plug M5x0.8(M) |





NA-CC-01-04



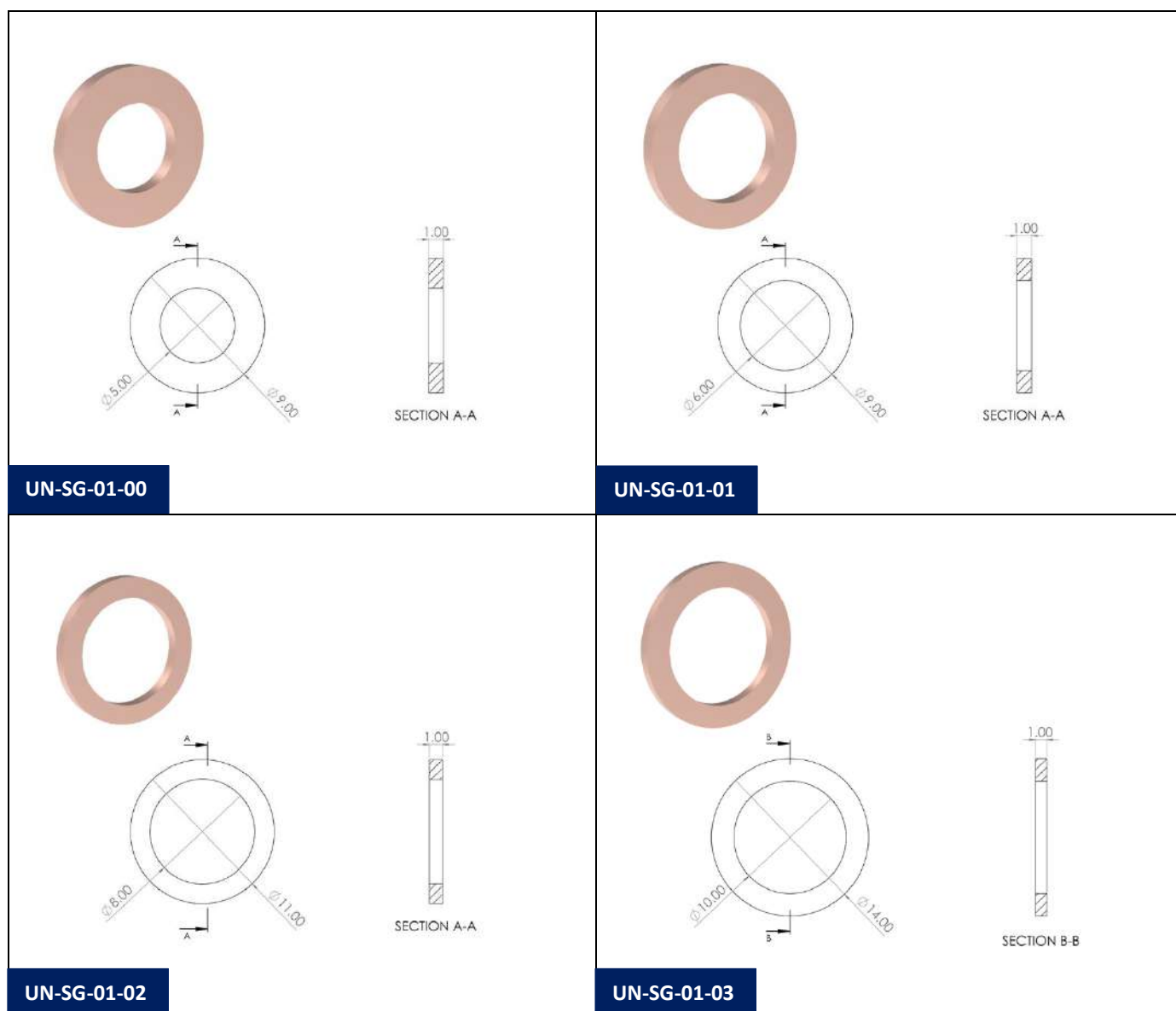
NA-CC-01-05

Sealing gasket:

Guarantees the tightness between the different connecting elements and according to the required diameters. Common to MICRO and NANO program.

Material: Copper.

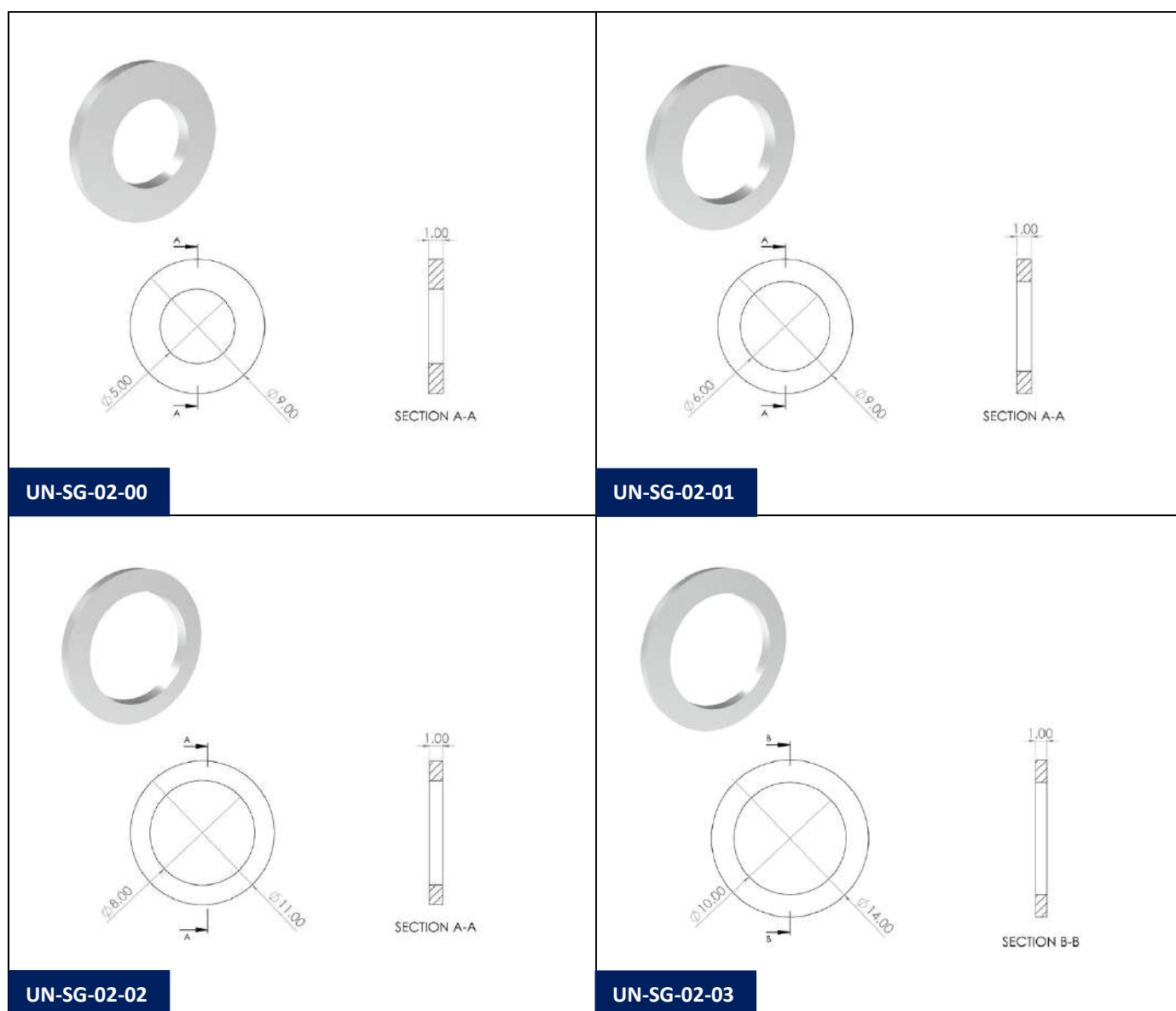
| Ref. | Description |
|-------------|--|
| UN-SG-01-00 | Sealing gasket in copper for M5 (10 units) |
| UN-SG-01-01 | Sealing gasket in copper for M6 (10 units) |
| UN-SG-01-02 | Sealing gasket in copper for M8 (10 units) |
| UN-SG-01-03 | Sealing gasket in copper for M10 and BSP 1/8" (10 units) |



Guarantees the tightness between the different connecting elements and according to the required diameters. Common to MICRO and NANO program.

Material: Aluminum.

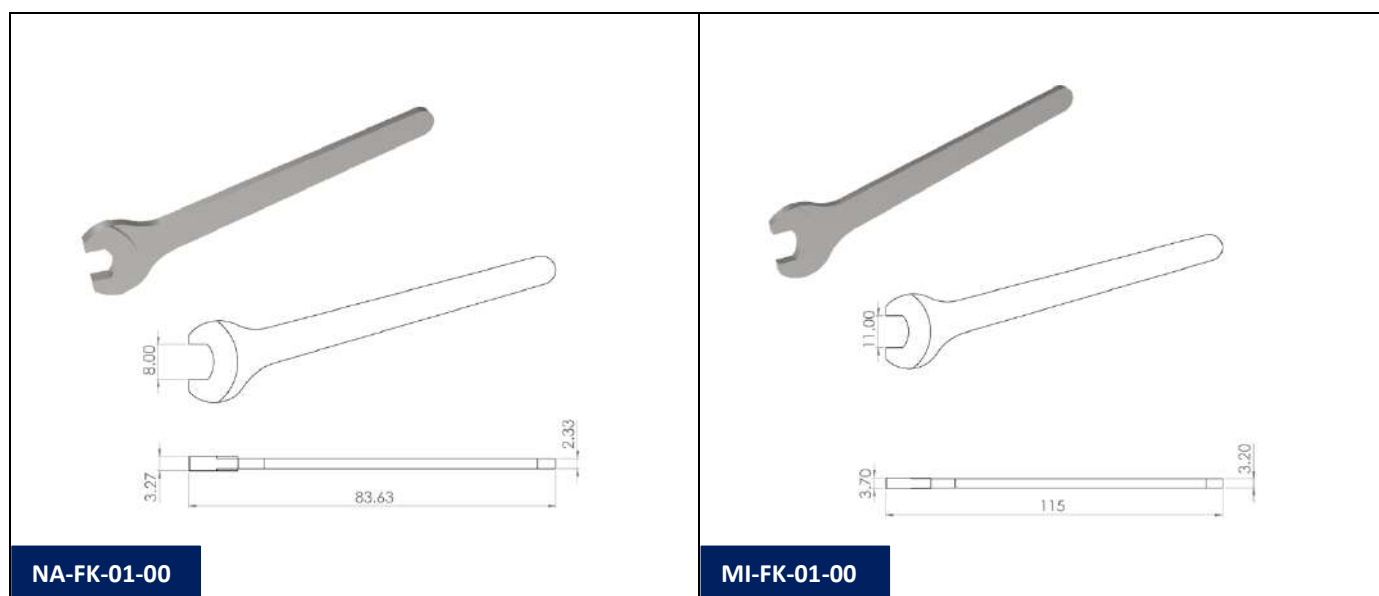
| Ref. | Description |
|-------------|--|
| UN-SG-02-00 | Sealing gasket in aluminum for M5 (10 units) |
| UN-SG-02-01 | Sealing gasket in aluminum for M6 (10 units) |
| UN-SG-02-02 | Sealing gasket in aluminum for M8 (10 units) |
| UN-SG-02-03 | Sealing gasket in aluminum for M10 and BSP 1/8" (10 units) |



Fastening keys for the coolant distribution fittings:

Special wrench for NANO program assembly. 8 mm between flats.

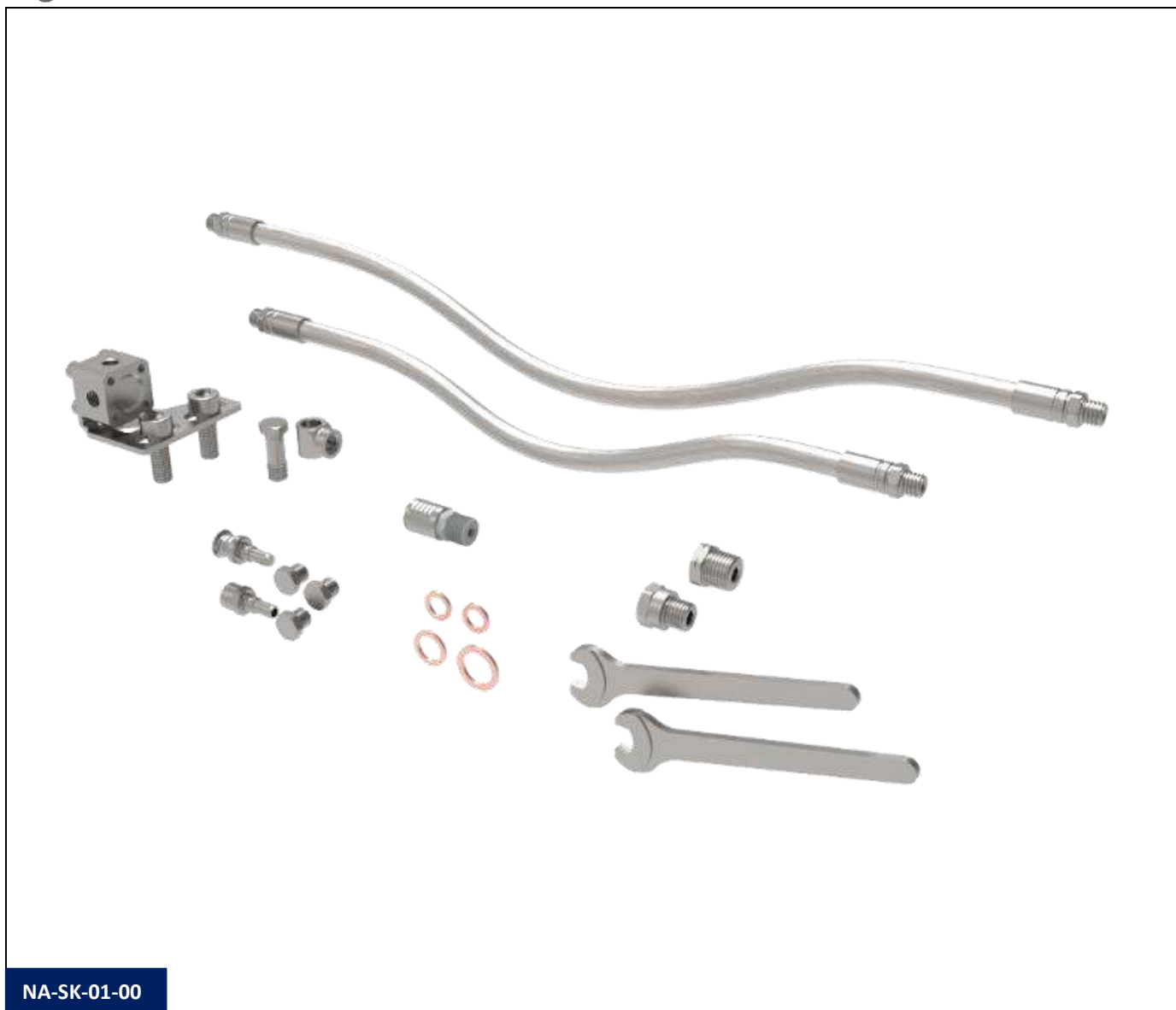
| Ref. | Description |
|-------------|---|
| NA-FK-01-00 | Wrench for assembly on the universal hexagon used in the NANO program. SW8 |
| MI-FK-01-00 | Wrench for assembly on the universal hexagon used in the MICRO program and in some adaptors of the NANO program. SW11 |



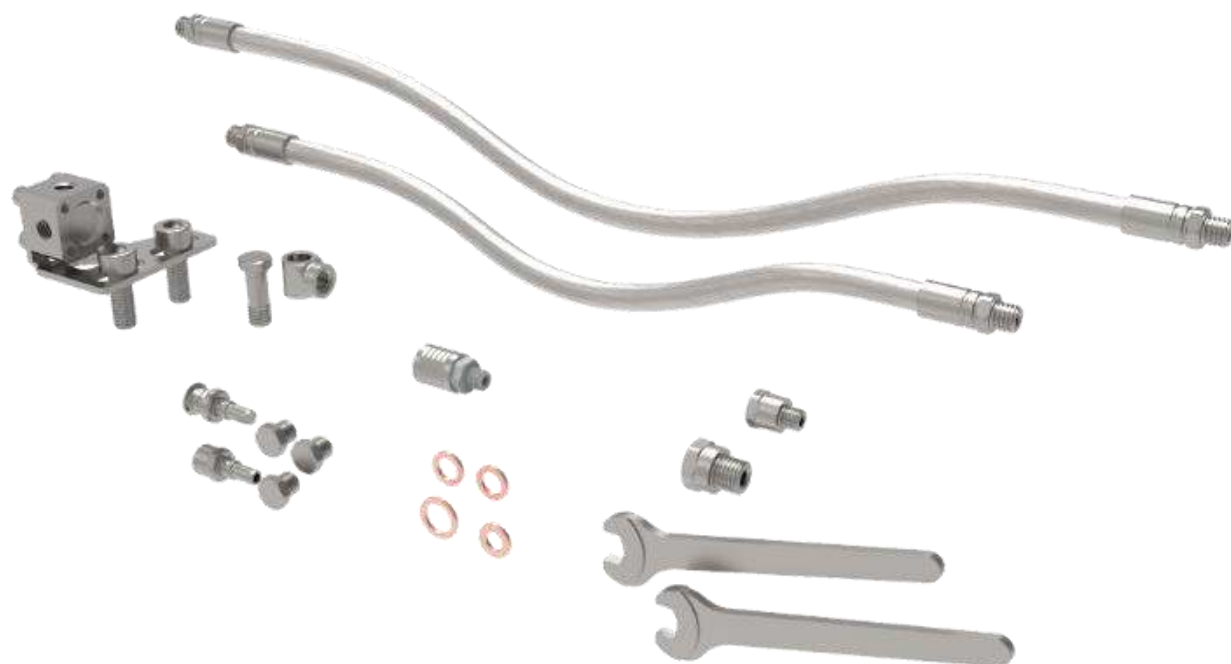
Starter kit:

Set of components to start and become familiar with the SCS Coolant Distribution System NANO program.
Basic set of components delivered in a basic kit for the most typical applications.

| Ref. | Description |
|-------------|--|
| NA-SK-01-00 | <p>Basic Kit Drilling/Boring NANO: For collet tool holder or round shank tool</p> <p>Quick Connection fittings: 1 unit NA-QC-01-00 Quick connection fitting NANO with M6x1(M) in one end.</p> <p>Distribution tubes: 1 unit NA-DT-01-01 M6x1(M), flexible tube OD:6.5 mm, 8" (203 mm), M6x1(M) 1 unit NA-DT-01-02 M6x1(M), flexible tube OD:6.5 mm, 12" (305 mm), M6x1(M)</p> <p>Standard coolant distribution block: 1 unit NA-DB-01-00 18x18x12 mm distribution block with coolant inlet in M8x1(F) inlet and 3 outlets in M6x1(F). Includes supporting plate to machine with 3 Fastening slotted holes for M6 screw.</p> <p>Connectors and adaptors: 1 unit NA-CA-01-00 M6x1(F) to BSPT 1/8"(M) 1 unit NA-CA-01-06 M6x1(F) to M8x1(M) 1 unit NA-CA-04-00 Short banjo M6x1(F) 1 unit NA-CA-04-04 Banjo bolt M6x1(M)</p> <p>Locking and connecting plugs: 1 unit NA-CC-01-00 Sealing plug with quick connection fitting NANO 1 unit NA-CC-01-01 Quick connection fitting NANO to M6x1(F) 3 units CC-01-04 Sealing plug M6x1(M)</p> <p>Sealing gasket: 2 units UNA-SG-01-01 Sealing gasket in copper for M6 (10 units) 1 unit UNA-SG-01-02 Sealing gasket in copper for M8 (10 units) 1 unit SG-01-03 Sealing gasket in copper for M10 and BSP 1/8" (10 units)</p> <p>Fastening keys for the coolant distribution fittings: 2 units NA-FK-01-00 Wrench for assembly on the universal hexagon used in the NANO program. SW8 (8 mm between flats)</p> |

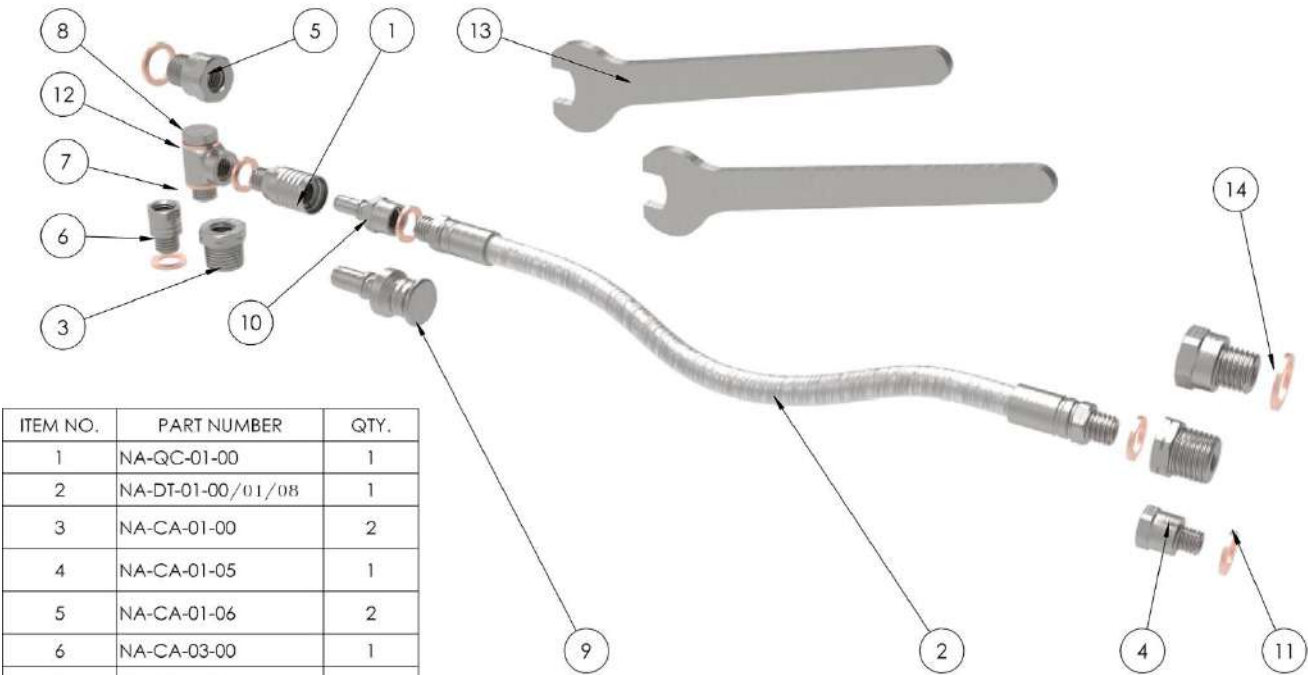


| Ref. | Description |
|-------------|--|
| NA-SK-01-01 | <p>Basic Kit Turning/Grooving/Cut off NANO: For square shank tool holders</p> <p>Quick Connection fittings: 1 unit NA-QC-01-00 Quick connection fitting NANO with M6x1(M) on one end.</p> <p>Distribution tubes: 1 unit NA-DT-01-01 M6x1(M), flexible tube OD:6.5 mm, 8" (203 mm), M6x1(M) 1 unit NA-DT-01-02 M6x1(M), flexible tube OD:6.5 mm, 12" (305 mm), M6x1(M)</p> <p>Standard coolant distribution block: 1 unit NA-DB-01-00 18x18x12 mm distribution block with coolant inlet in M8x1(F) inlet and 3 outlets in M6x1(F). Includes supporting plate to machine with 3 Fastening slotted holes for M6 screw.</p> <p>Connectors and adaptors: 1 unit NA-CA-01-05 M6x1(F) to M5x0.8(M) 1 unit NA-CA-01-06 M6x1(F) to M8x1(M) 1 unit NA-CA-03-00 Spacer H:8 mm M6x1(M)-M6x1(F) 1 unit NA-CA-03-01 Spacer H:13 mm M6x1(M)-M6x1(F) 1 unit NA-CA-04-00 Short banjo M6x1(F) 1 unit NA-CA-04-04 Banjo bolt M6x1(M)</p> <p>Locking and connecting plugs: 1 unit NA-CC-01-00 Sealing plug with quick connection fitting NANO 1 unit NA-CC-01-01 Quick connection fitting NANO to M6x1(F) 3 units NA-CC-01-04 Sealing plug M6x1(M)</p> <p>Sealing gasket: 1 unit UN-SG-01-00 Sealing gasket in copper for M5 (10 units) 2 units UN-SG-01-01 Sealing gasket in copper for M6 (10 units) 1 unit UN-SG-01-02 Sealing gasket in copper for M8 (10 units)</p> <p>Fastening keys for the coolant distribution fittings: 2 units NA-FK-01-00 Wrench for assembly on the universal hexagon used in the NANO program. SW8</p> |



NA-SK-01-01

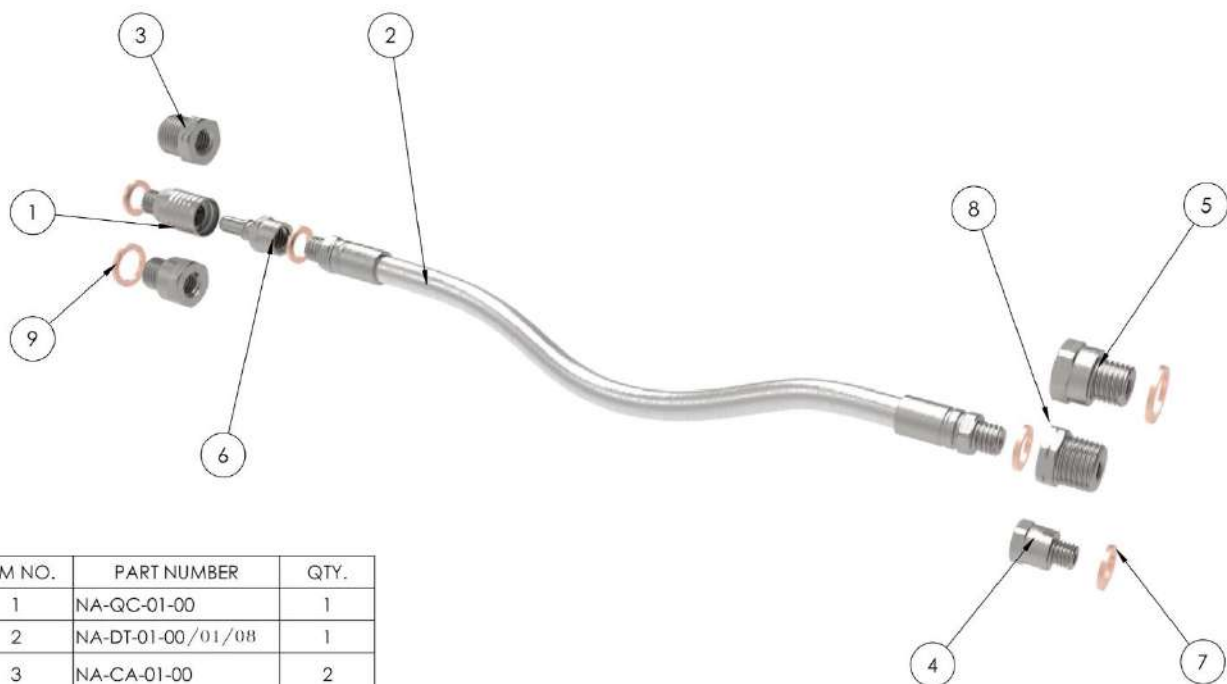
| Ref. | Description |
|------------------------------------|---|
| | <p>Basic starter kit NANO for 1 tool with flexible tube 102 or 152 or 203 mm and banjo. Assembled.</p> <p>Quick Connection fittings: 1 unit NA-QC-01-00 Quick connection fitting NANO with M6x1(M) on one end.</p> <p>Flexible distribution tubes: 1 unit NA-DT-01-00 or 01 or 08 M6x1(M), flexible tube OD:6.5 mm, L:4" or 6" or 8" (102 or 152 or 203 mm), M6x1(M)</p> <p>Connectors and adaptors: 2 units NA-CA-01-00 Adaptor M6x1(H) to BSPT 1/8"(M) 1 unit NA-CA-01-05 Adaptor M6x1(H) to M5x0.8(M) 2 units NA-CA-01-06 Adaptor M6x1(H) to M8x1(M) 1 unit NA-CA-03-00 Spacer H:8 mm M6x1(M)-M6x1(F) 1 unit NA-CA-04-00 Short banjo M6x1(F) 1 unit NA-CA-04-04 Banjo bolt M6x1(M)</p> <p>Locking and connecting plugs: 1 unit NA-CC-01-00 Sealing plug with quick connection fitting NANO 1 unit NA-CC-01-01 Quick connection fitting NANO to M6x1(F)</p> <p>Sealing gaskets: 0.1 unit UN-SG-01-00 Sealing gasket in copper for M5 (10 units) 0.6 units UN-SG-01-01 Sealing gasket in copper for M6 (10 units) 0.2 units UN-SG-01-02 Sealing gasket in copper for M8 (10 units)</p> <p>Fastening wrenches for the fittings: 2 units NA-FK-01-00 Wrench for assembly on the universal hexagon used in the NANO program. SW8</p> |
| NA-SK-01-02 (102 mm flex. tube) | |
| NA-SK-01-06 (152 mm flex. tube) | |
| NA-SK-01-03 (203 mm flex. tube) | |



| ITEM NO. | PART NUMBER | QTY. |
|----------|-------------------|------|
| 1 | NA-QC-01-00 | 1 |
| 2 | NA-DT-01-00/01/08 | 1 |
| 3 | NA-CA-01-00 | 2 |
| 4 | NA-CA-01-05 | 1 |
| 5 | NA-CA-01-06 | 2 |
| 6 | NA-CA-03-00 | 1 |
| 7 | NA-CA-04-00 | 1 |
| 8 | NA-CA-04-04 | 1 |
| 9 | NA-CC-01-00 | 1 |
| 10 | NA-CC-01-01 | 1 |
| 11 | UN-SG-01-00 | 1 |
| 12 | UN-SG-01-01 | 6 |
| 13 | NA-FK-01-00 | 2 |
| 14 | UN-SG-01-02 | 2 |

NA-SK-01-02/06/03

| Ref. | Description |
|------------------------------------|---|
| NA-SK-01-04 (102 mm flex. tube) | <p>Kit NANO flexible tube 102 or 152 or 203 with quick connection fitting. Assembled.</p> <p>Quick Connection fittings: 1 unit NA-QC-01-00 Quick connection fitting NANO with M6x1(M) on one end.</p> <p>Flexible distribution tubes: 1 unit NA-DT-01-00 or 01 or 08 M6x1(M), flexible tube OD:6.5 mm, L:4" or 6" or 8" (102 or 152 or 203 mm), M6x1(M)</p> <p>Connectors and adaptors: 2 units NA-CA-01-00 Adaptor M6x1(H) to BSPT 1/8"(M) 1 unit NA-CA-01-05 Adaptor M6x1(H) to M5x0.8(M) 2 units NA-CA-01-06 Adaptor M6x1(H) to M8x1(M)</p> <p>Locking and connecting plugs: 1 unit NA-CC-01-01 Quick connection fitting NANO to M6x1(F)</p> <p>Sealing gaskets: 0.1 unit UN-SG-01-00 Sealing gasket in copper for M5 (10 units) 0.3 units UN-SG-01-01 Sealing gasket in copper for M6 (10 units) 0.2 units UN-SG-01-02 Sealing gasket in copper for M8 (10 units)</p> |
| NA-SK-01-07 (152 mm flex. tube) | |
| NA-SK-01-05 (203 mm flex. tube) | |



| ITEM NO. | PART NUMBER | QTY. |
|----------|-------------------|------|
| 1 | NA-QC-01-00 | 1 |
| 2 | NA-DT-01-00/01/08 | 1 |
| 3 | NA-CA-01-00 | 2 |
| 4 | NA-CA-01-05 | 1 |
| 5 | NA-CA-01-06 | 2 |
| 6 | NA-CC-01-01 | 1 |
| 7 | UN-SG-01-00 | 1 |
| 8 | UN-SG-01-01 | 3 |
| 9 | UN-SG-01-02 | 2 |

MI-SK-01-04/07/05

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2. ARTICULATED STEEL FLEXIBLE DISTRIBUTION TUBES FOR MACHINING WITH LOW, MEDIUM AND HIGH-PRESSURE COOLANT



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COOLANT DISTRIBUTION SYSTEM WITH ARTICULATED FLEXIBLE TUBES IN NiZn STEEL WITH 4 DIFFERENT PROGRAMS (DIMENSIONS) FOR LOW, MEDIUM AND HIGH PRESSURE

Modular articulated system for the supply of refrigerant at low, medium or high-pressure. Ideal for both fixed-head and Swiss-type CNC lathes, vertical and horizontal machining centers, grinding or transfer machines

4 manufacturing programs according to the required flow:

- DECA: 3 mm through hole for coolant supply.
- HECTO: 6 mm through hole for coolant supply.
- MEGA: 10.5 mm through hole for coolant supply.
- GIGA: 16 mm through hole for coolant supply.

| Pressure (Bar) | DECA (l/min) | HECTO (l/min) | MEGA (l/min) | GIGA (l/min) |
|-------------------|-----------------|------------------|-----------------|-----------------|
| 2 | 6 | 24 | 73 | 169 |
| 8 | 12 | 48 | 145 | 338 |
| 15 | 16 | 65 | 199 | 463 |
| 20 | 19 | 75 | 230 | 534 |
| 30 | 23 | 92 | 282 | 654 |
| 50 | 30 | 119 | 364 | 844 |
| 80 | 38 | 150 | 460 | 1068 |
| 100 | 42 | 168 | --- | --- |
| 150 | 51 | --- | --- | --- |

These 4 different programs can be connected with each other and with the MICRO and NANO programs.

Exclusive operation of the mechanism that allows to position and use it with low pressures without the need of tightening of the nuts, even in this mode of operation a total liquid tightness is maintained. For high-pressure work, it must be blocked to ensure stiffness.

It withstands the vibration and pressure of the refrigerant without losing the position. It can be orientated and fixed without the need to use mounting keys.

It allows to work with emulsion or cutting oil.

In the "Initial Connection" (IC) parts, BSP threads have 1 mark in the hexagon area and NPT threads have 2 marks. Metric threads have no marks. This marking allows for easy identification.

Resistant to pressures of up to 80 bar (1,160 psi) in the programs GIGA and MEGA, 100 bar (1,450 psi) in the program HECTO and 150 bar (2,175 psi) in the program DECA.

GIGA PROGRAM



MEGA PROGRAM

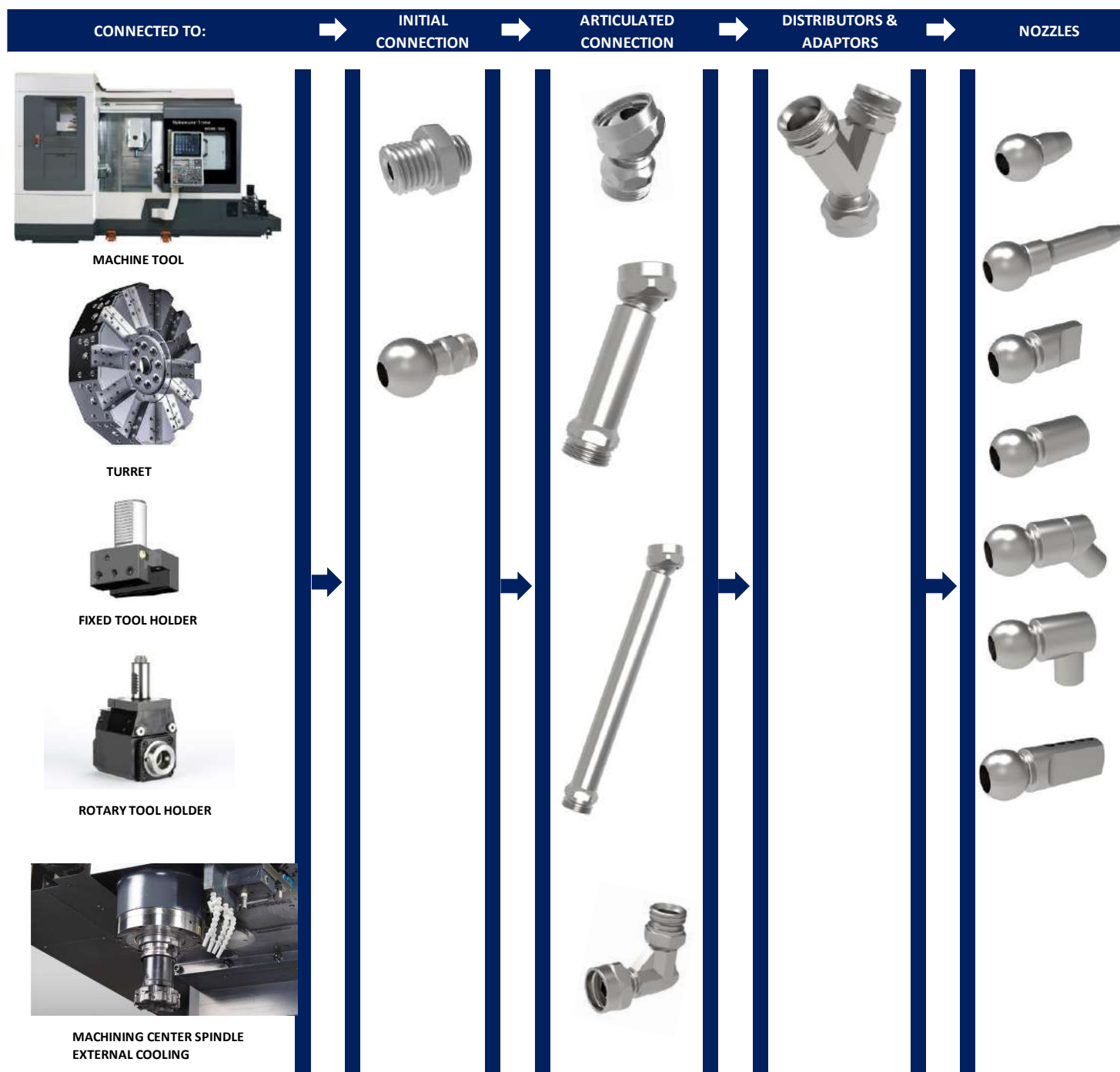


HECTO PROGRAM

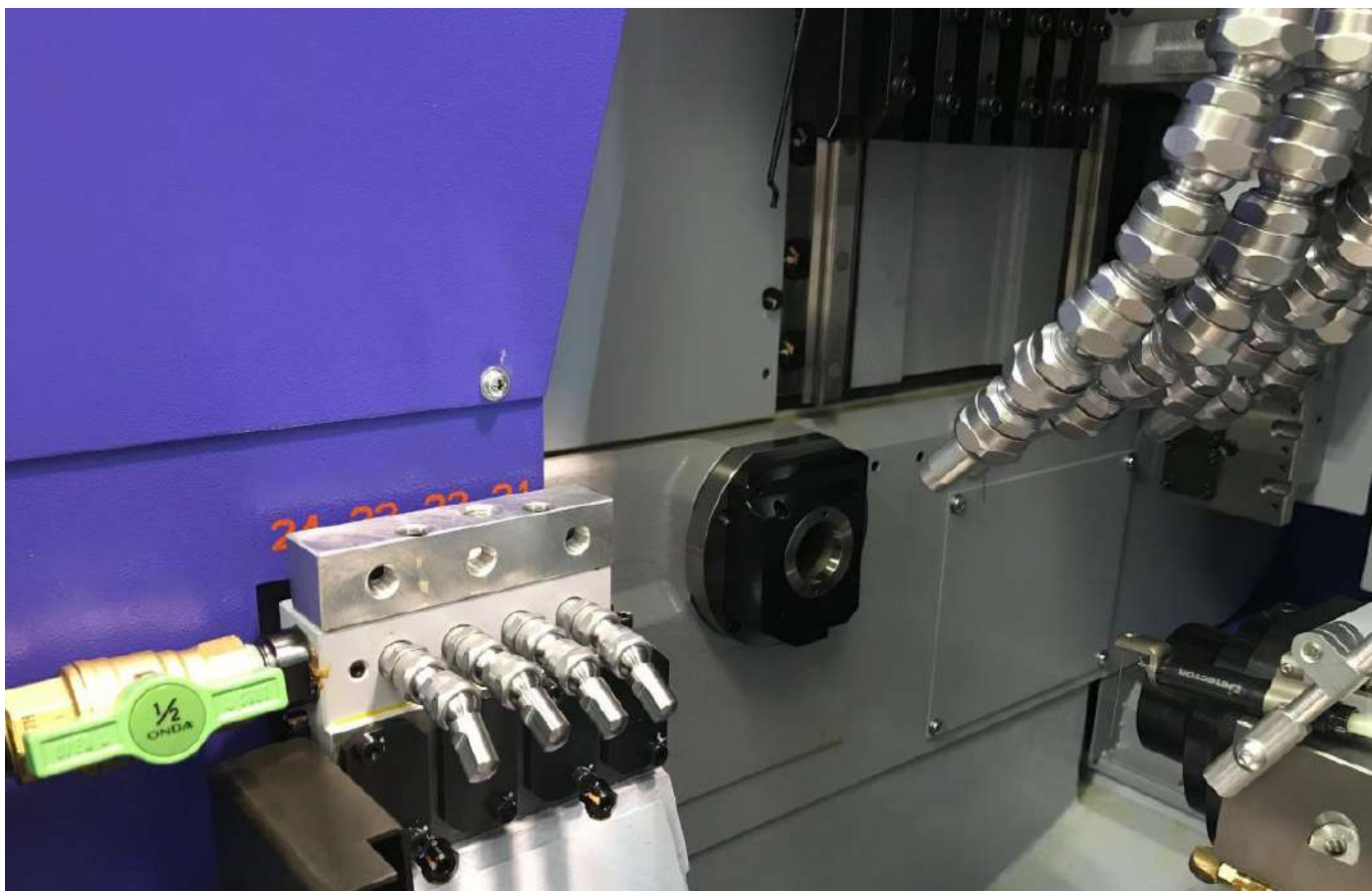


DECA PROGRAM

Articulated steel tube system assembly:



Example of installation in a Swiss-type lathe:



HECTO system mounted for tool back-post cooling

MEGA system mounted for main spindle cooling



Assembly HECTO (6 mm):

- 4 x 1 unit HE-IC-01-02 BSP 1/4"(M) to articulated connection
- 4 x 1 unit HE-AC-01-00 Articulated connection L:20.5 mm
- 4 x 1 unit HE-NZ-03-00 Nozzle 90°. ID:3.4 mm x 3 & L:24 mm



Assembly MEGA (10.5 mm):

- 4 x 1 unit ME-IC-01-00 BSP 3/8"(M) to articulated connection
- 4 x 4 unit ME-AC-01-00 Articulated connection L:28.5 mm
- 4 x 1 ME-AC-01-02 Articulated connection L=128.5 mm
- 4 x 1 unit ME-NZ-01-00 Straight nozzle. ID:10.5 mm & L:27 mm

- 2 x 1 unit ME-IC-01-00 BSP 3/8"(M) to articulated connection
- 2 x 1 unit ME-NZ-01-00 Straight nozzle. ID:10.5 mm & L:27 mm

Example of installation in a rotary tool holder for a CNC lathe:



DECA system mounted in rotary tool holder. Straight nozzle ID:3 mm & L:10 mm



HECTO system mounted in rotary tool holder. Straight nozzle ID:6 mm & L:16 mm



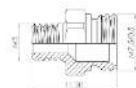
HECTO system mounted in rotary tool holder. Straight nozzle ID:3 mm x 3 & L:20 mm



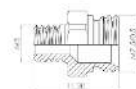
HECTO system mounted in rotary tool holder. Straight nozzle coaxial ID:3.4 x 3 & L=20 mm

DECA (3 mm) PROGRAM

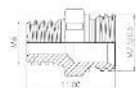
INITIAL CONNECTION DE-IC-XX-XX



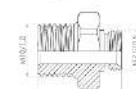
DE-IC-01-00



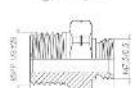
DE-IC-01-01



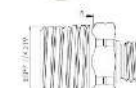
DE-IC-01-02



DE-IC-01-03



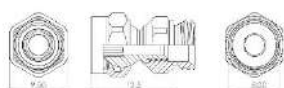
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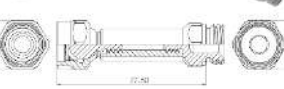
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V1.12 y19-12-01 (EN)

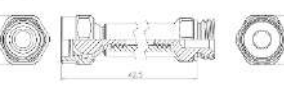
ARTICULATED CONNECTION DE-AC-XX-XX



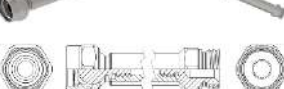
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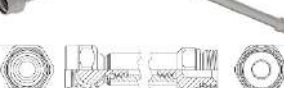
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DE-AC-01-02



DE-AC-01-03

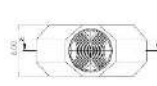


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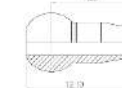


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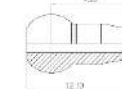
DISTRIBUTORS & ADAPTORS DE-DA-XX-XX



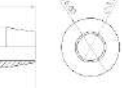
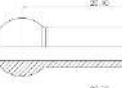
DE-DA-01-00



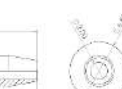
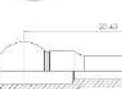
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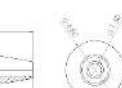
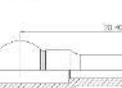
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DE-NZ-01-02



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DE-NZ-01-04



DE-NZ-01-05

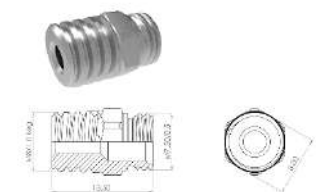
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INITIAL CONNECTION
DE-IC-XX-XX

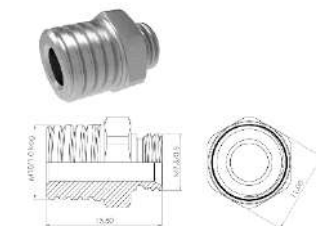
ARTICULATED CONNECTION
DE-AC-XX-XX

DISTRIBUTORS & ADAPTORS
DE-DA-XX-XX

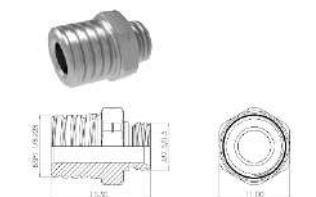
NOZZLES
DE-NZ-XX-XX



DE-IC-01-06



DE-IC-01-07



DE-IC-01-08



DE-IC-01-09



DE-IC-01-10



DE-IC-02-00

Drawing not available

DE-NZ-02-01

Drawing not available

DE-NZ-02-02

Drawing not available

DE-NZ-02-03

Drawing not available

DE-NZ-02-03

Drawing not available

DE-NZ-03-01

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DE-NZ-03-02

Cont'd

INITIAL CONNECTION

DE-IC-XX-XX

ARTICULATED CONNECTION

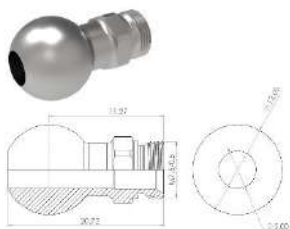
DE-AC-XX-XX

DISTRIBUTORS & ADAPTORS

DE-DA-XX-XX

NOZZLES

DE-NZ-XX-XX



DE-IC-02-01



DE-IC-02-02

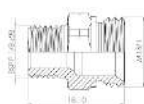


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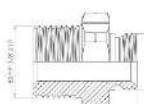
HECTO (6 mm) PROGRAM

INITIAL CONNECTION

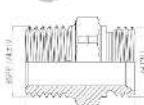
HE-IC-XX-XX



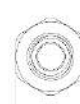
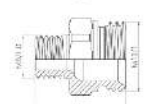
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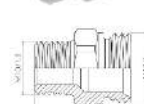
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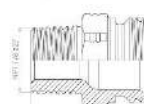
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HE-IC-01-03



HE-IC-01-04

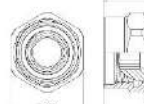


HE-IC-01-05

V1.12 y19-12-01 (EN)

ARTICULATED CONNECTION

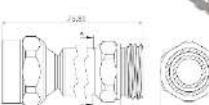
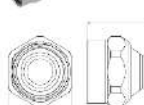
HE-AC-XX-XX



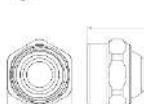
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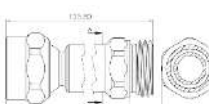
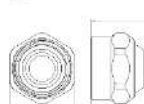
HE-AC-01-01



HE-AC-01-02



HE-AC-01-03



HE-AC-01-04



HE-AC-02-00

DISTRIBUTORS & ADAPTORS

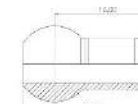
HE-DA-XX-XX

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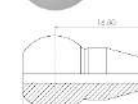
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NOZZLES

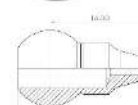
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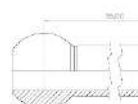
HE-NZ-01-00



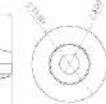
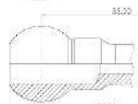
HE-NZ-01-01



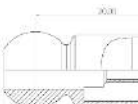
HE-NZ-01-02



HE-NZ-01-03



HE-NZ-01-04



HE-NZ-01-05

Cont'd

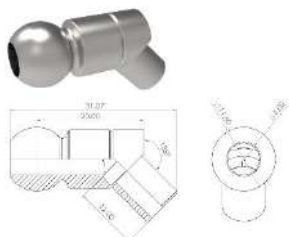
INITIAL CONNECTION
HE-IC-XX-XX

Drawing not available

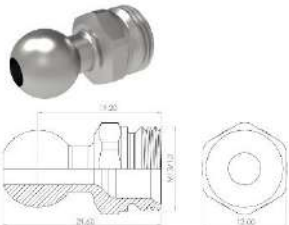
HE-IC-01-06



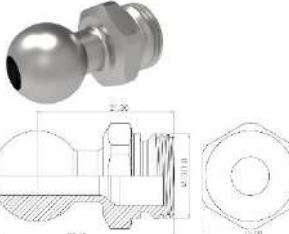
HE-IC-01-07



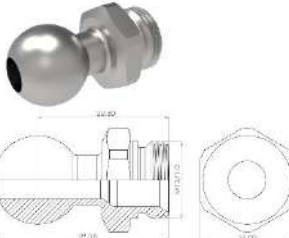
HE-IC-02-00



HE-IC-02-01



HE-IC-02-02



HE-IC-02-03

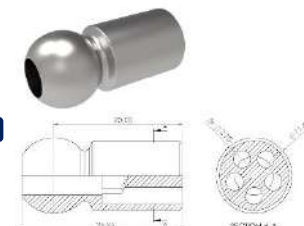
ARTICULATED CONNECTION
HE-AC-XX-XX

DISTRIBUTORS & ADAPTORS
HE-DA-XX-XX

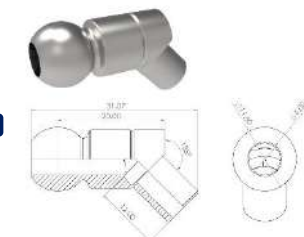
NOZZLES
HE-NZ-XX-XX



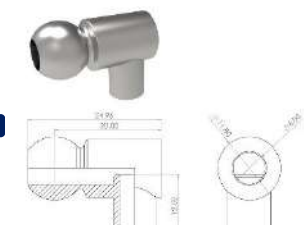
HE-NZ-01-06



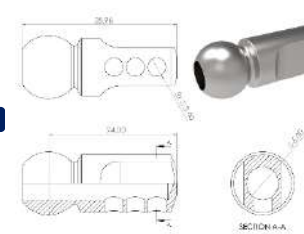
HE-NZ-01-07



HE-NZ-02-00



HE-NZ-03-00



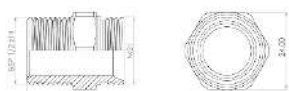
HE-NZ-03-01

MEGA (10.5 mm) PROGRAM

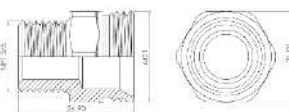
INITIAL CONNECTION ME-IC-XX-XX



ME-IC-01-00



ME-IC-01-01

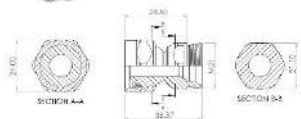


ME-IC-01-02

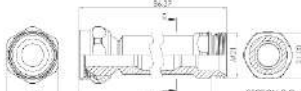
Drawing not available

ME-IC-01-03

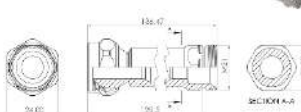
ARTICULATED CONNECTION ME-AC-XX-XX



ME-AC-01-00



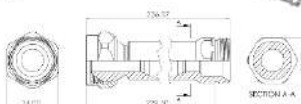
ME-AC-01-01



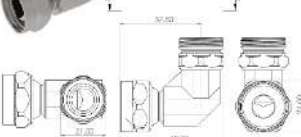
ME-AC-01-02



ME-AC-01-03



ME-AC-01-04



ME-AC-02-00

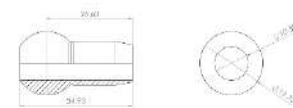
DISTRIBUTORS & ADAPTORS ME-DA-XX-XX



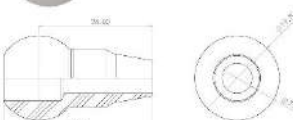
ME-DA-01-00



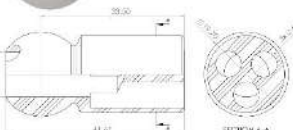
NOZZLES ME-NZ-XX-XX



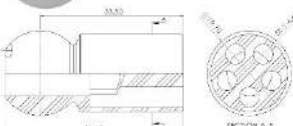
ME-NZ-01-00



ME-NZ-01-01



ME-NZ-01-02



ME-NZ-01-03

Drawing not available

ME-NZ-02-00

Drawing not available

ME-NZ-03-00

Cont'd

INITIAL CONNECTION

ME-IC-XX-XX

ARTICULATED CONNECTION

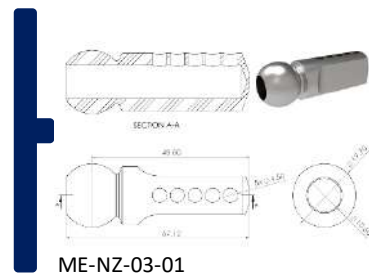
ME-AC-XX-XX

DISTRIBUTORS & ADAPTORS

ME-DA-XX-XX

NOZZLES

ME-NZ-XX-XX



GIGA (16 mm) PROGRAM

INITIAL CONNECTION GI-IC-XX-XX



GI-IC-01-00



GI-IC-01-01



GI-IC-01-02

ARTICULATED CONNECTION GI-AC-XX-XX



GI-AC-01-00



GI-AC-01-01



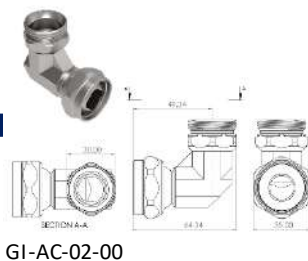
GI-AC-01-02



GI-AC-01-03

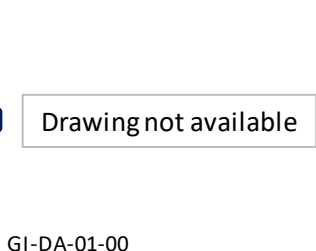


GI-AC-01-04



GI-AC-02-00

DISTRIBUTORS & ADAPTORS GI-DA-XX-XX



GI-DA-01-00

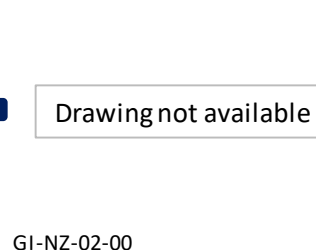
NOZZLES GI-NZ-XX-XX



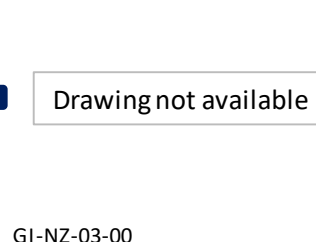
GI-NZ-01-00



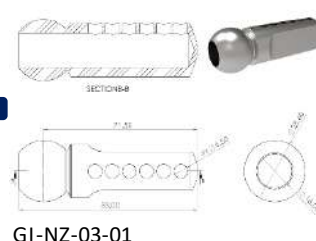
GI-NZ-01-01



GI-NZ-02-00



GI-NZ-03-00



GI-NZ-03-01

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DECA (3 mm) PROGRAM

The internal through hole of the DECA program is 3 mm and is ideal for the distribution of refrigerant (oil or emulsion) in small-sized machines such as Swiss-type CNC lathes, fixed-head CNC lathes, driven tools or as distribution branches of bigger programs (HECTO, MEGA or GIGA).

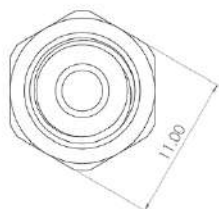
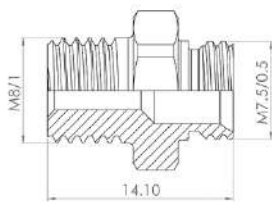
Maximum pressure: 150 Bar (2,175 psi)

Initial connection:

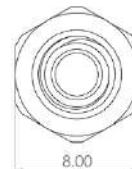
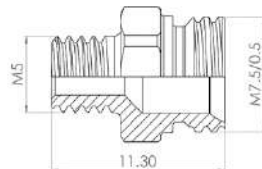
Connection elements with the machine-tool or other SCS coolant distribution programs. ID:3 mm.

Material: Steel

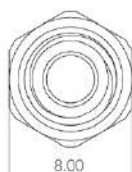
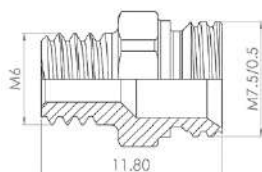
| Ref. | Description |
|-------------|---|
| DE-IC-01-00 | M8x1(M) to articulated connection DECA. |
| DE-IC-01-01 | M5x0.8(M) to articulated connection DECA. |
| DE-IC-01-02 | M6x1(M) to articulated connection DECA. |
| DE-IC-01-03 | M10x1(M) to articulated connection DECA. |
| DE-IC-01-04 | BSP 1/8"(M) to articulated connection DECA. |
| DE-IC-01-05 | BSP 1/4"(M) to articulated connection DECA. |
| DE-IC-01-06 | M8x1 keg(M) to articulated connection DECA. |
| DE-IC-01-07 | M10x1 keg(M) to articulated connection DECA. |
| DE-IC-01-08 | BSPT 1/8"(M) to articulated connection DECA. |
| DE-IC-01-09 | NPT 1/8"(M) to articulated connection DECA. |
| DE-IC-01-10 | NPT 1/4"(M) to articulated connection DECA. |
| DE-IC-01-11 | M10x1.5(M) to articulated connection DECA. |
| DE-IC-02-00 | Ball OD:10 mm to articulated connection DECA. |
| DE-IC-02-01 | Ball OD:12 mm to articulated connection DECA. |
| DE-IC-02-02 | Ball OD:14 mm to articulated connection DECA. |
| DE-IC-02-03 | Ball OD:15 mm to articulated connection DECA. |



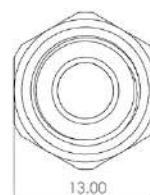
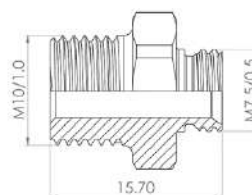
DE-IC-01-00



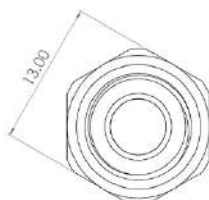
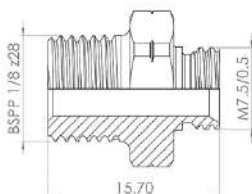
DE-IC-01-01



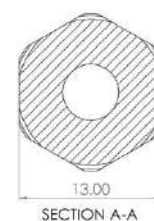
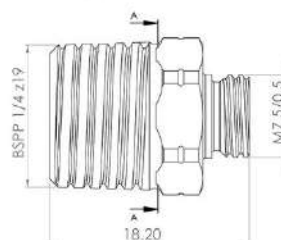
DE-IC-01-02



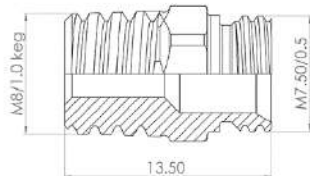
DE-IC-01-03



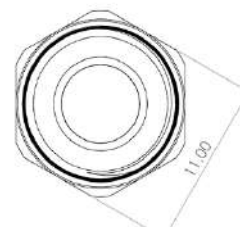
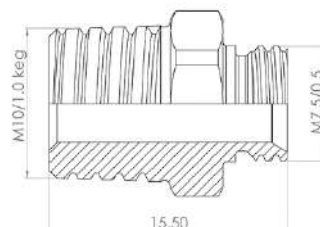
DE-IC-01-04



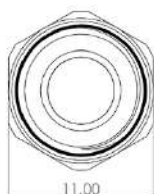
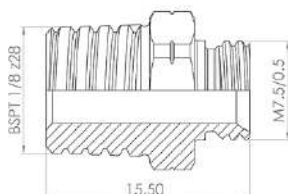
DE-IC-01-05



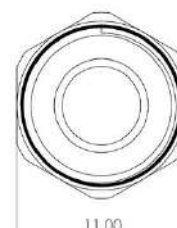
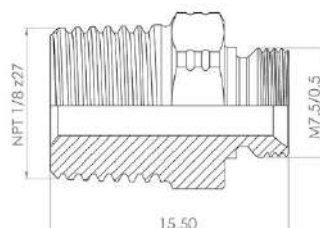
DE-IC-01-06



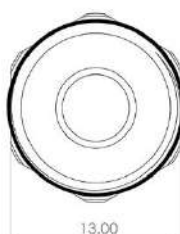
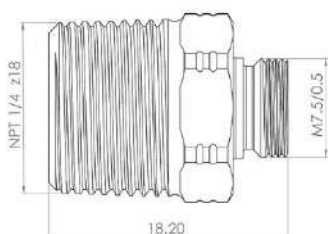
DE-IC-01-07



DE-IC-01-08



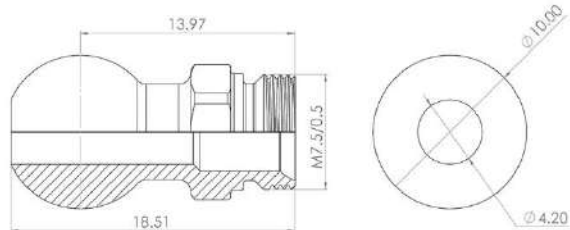
DE-IC-01-09



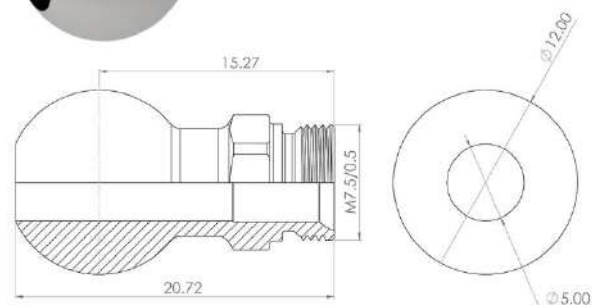
DE-IC-01-10

Drawing not available

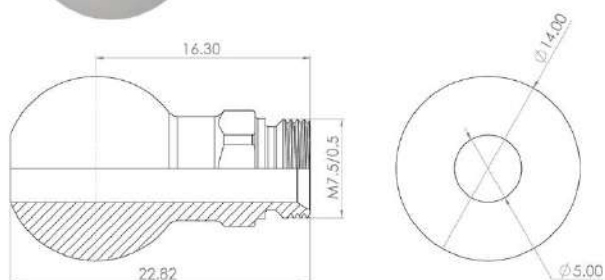
DE-IC-01-11



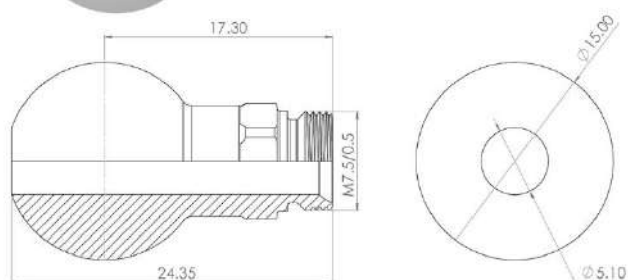
DE-IC-02-00



DE-IC-02-01



DE-IC-02-02



DE-IC-02-03

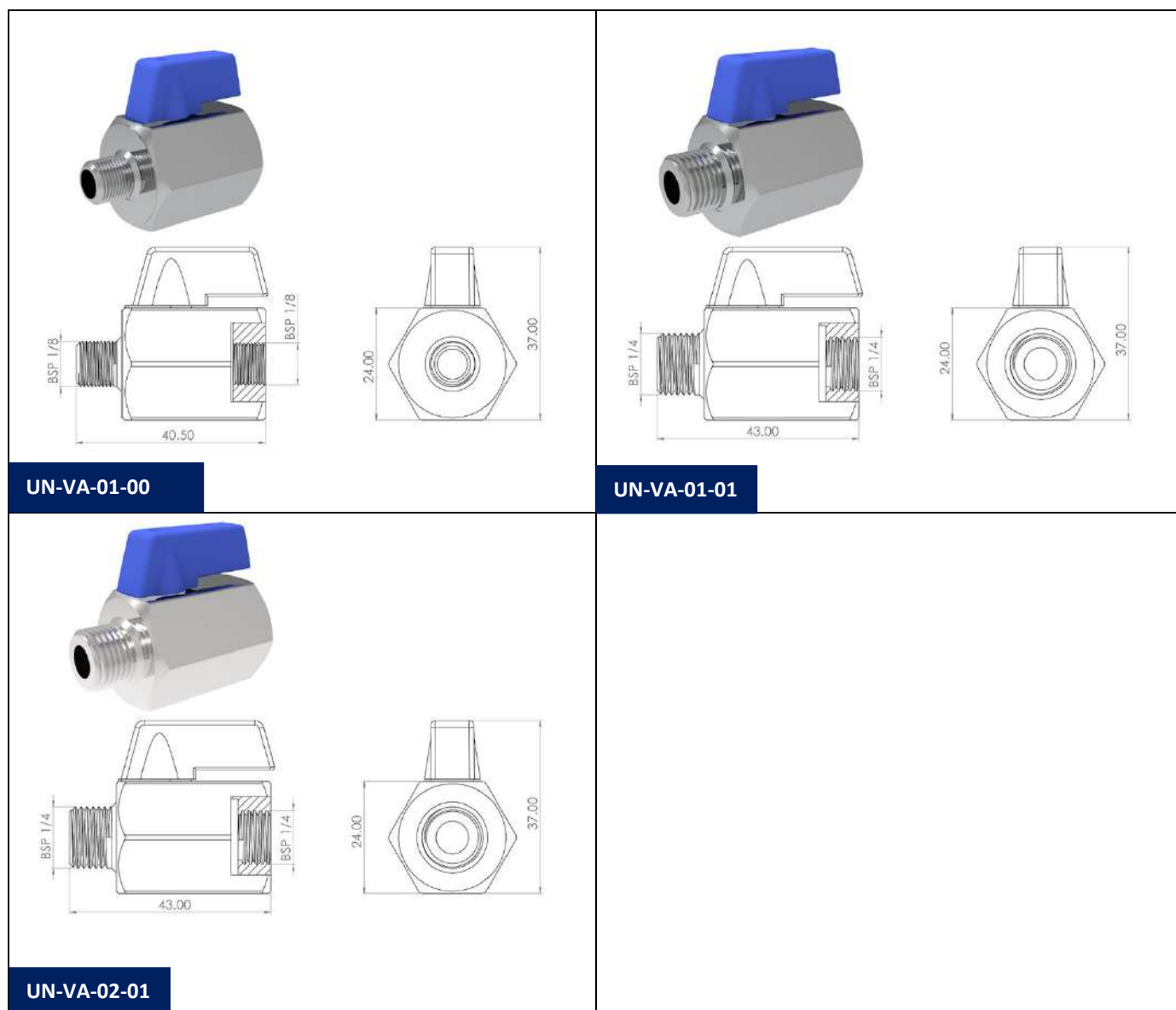
Ball valves:

Miniature ball valves for shut-off or control of the coolant flow. To be installed at the machine-tool coolant outlet.

Types:

- PN10: Pressure 10 bar (145 psi). Material: Chrome plated brass.
- PN63: Pressure 63 bar (914 psi). Material: Stainless steel AISI-316

| Ref. | Description |
|-------------|---|
| UN-VA-01-00 | Closing valve PN10, BSP1/8"(M) and BPS1/8"(F) chromed-plated brass. |
| UN-VA-01-01 | Closing valve PN10, BSP1/4"(M) and BPS1/4"(F) chromed-plated brass. |
| UN-VA-02-01 | Closing valve PN63, BSP1/4"(M) and BPS1/4"(F) AISI-316 |



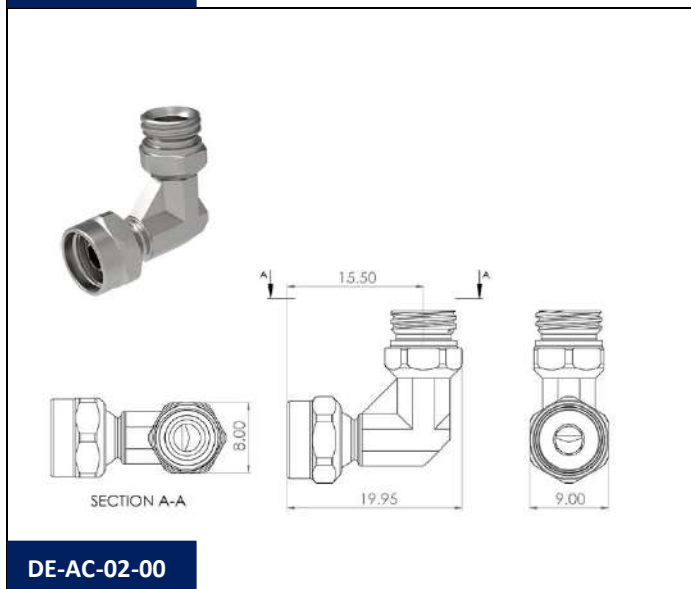
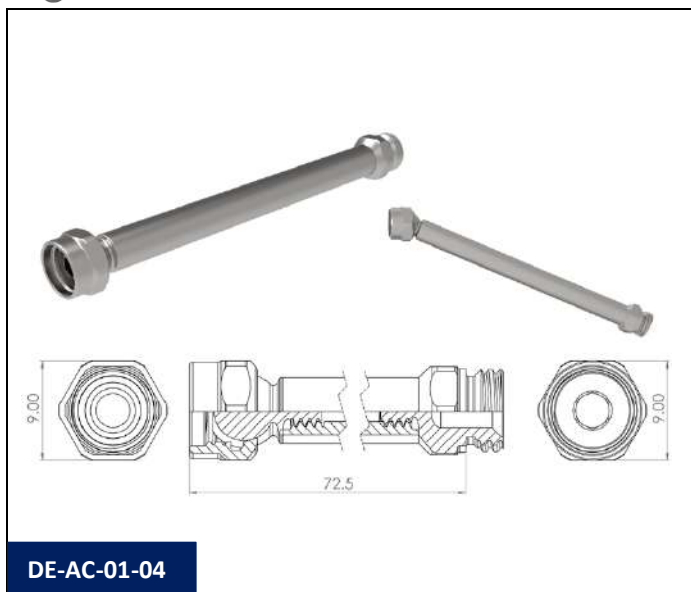
Articulated connection:

Basic articulated elements which connect to each other. Swiveling $\pm 25^\circ$. ID:3 mm.

Material: Steel

| Ref. | Description |
|-------------|---------------------------------------|
| DE-AC-01-00 | Articulated connection DECA L:12.5 mm |
| DE-AC-01-01 | Articulated connection DECA L:27.5 mm |
| DE-AC-01-02 | Articulated connection DECA L:42.5 mm |
| DE-AC-01-03 | Articulated connection DECA L:57.5 mm |
| DE-AC-01-04 | Articulated connection DECA L:72.5 mm |
| DE-AC-02-00 | Articulated connection to 90° DECA |



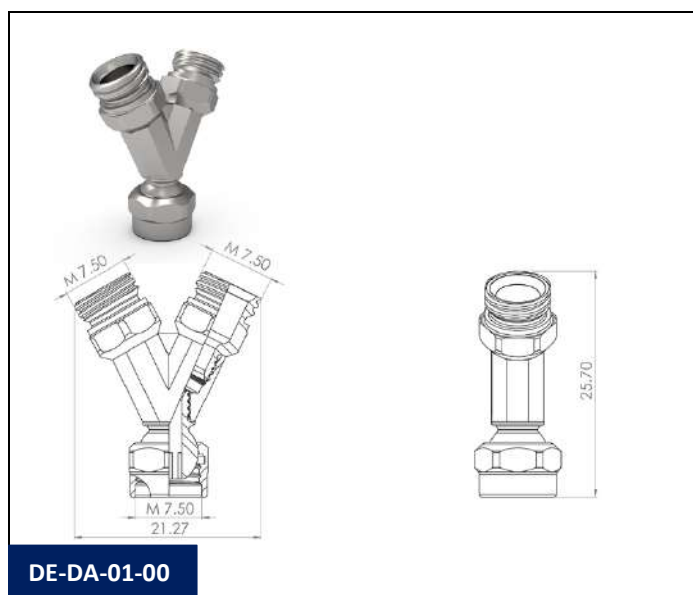


Distributors and adaptors:

Coolant distribution components, expansion of articulated lines and adaption to other SCS coolant distribution systems.

Material: Steel

| Ref. | Description |
|-------------|--|
| DE-DA-01-00 | "Y" distributor to articulated connection DECA |

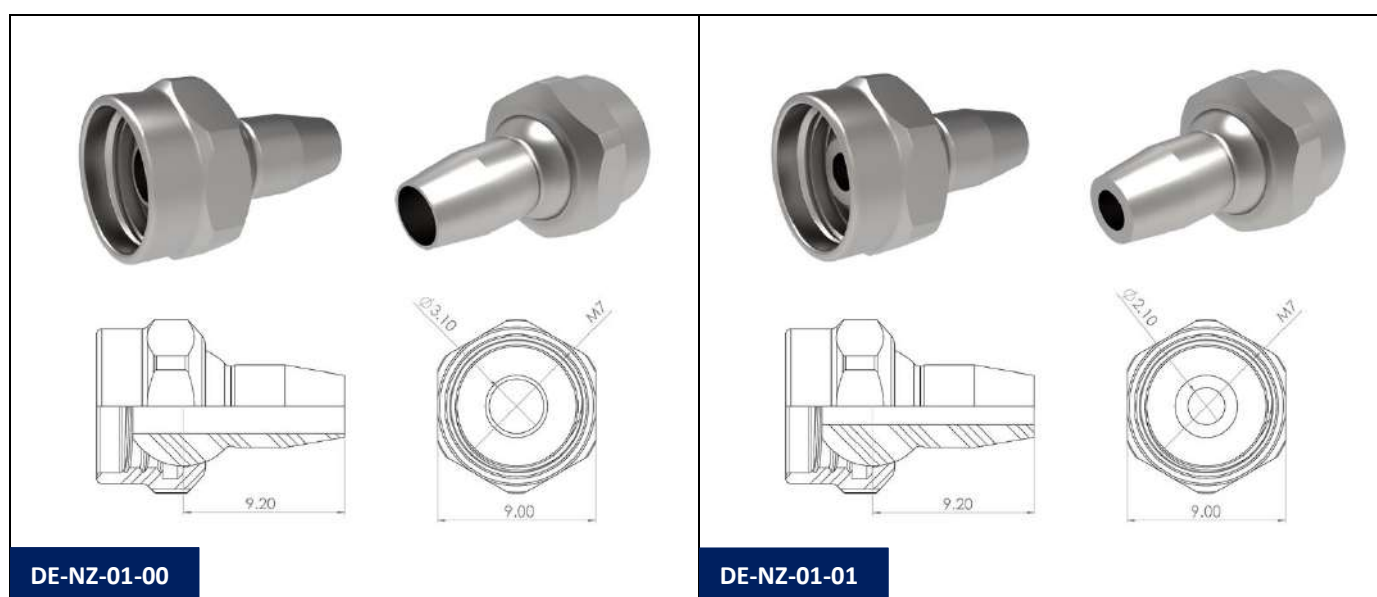


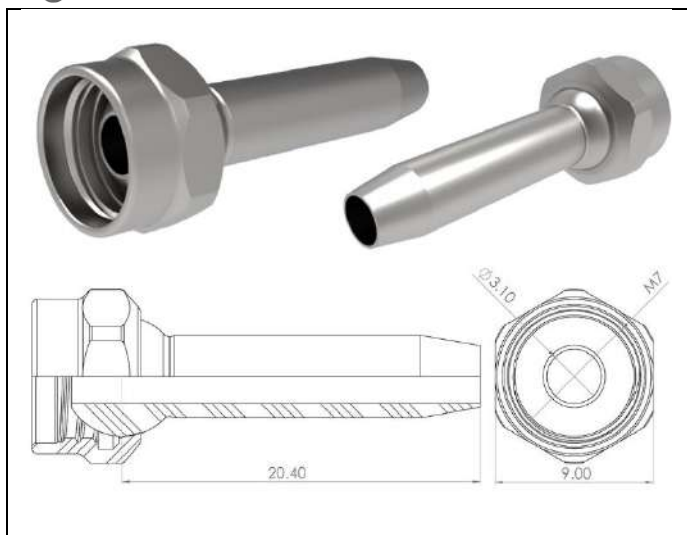
Coolant nozzles:

Nozzles with several designs adapted to meet different coolant delivery requirements.

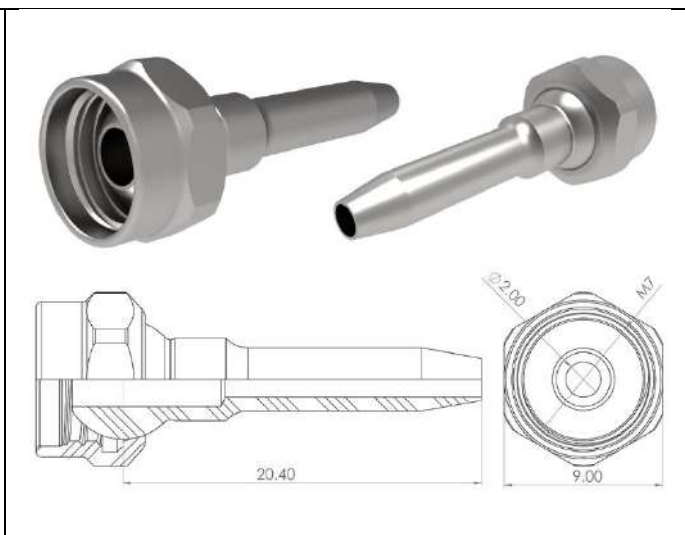
Material: Steel

| Ref. | Description |
|-------------|--|
| DE-NZ-01-00 | Straight nozzle ID:3 mm & L:9 mm |
| DE-NZ-01-01 | Straight nozzle ID:2 mm & L:9 mm |
| DE-NZ-01-02 | Straight nozzle ID:3 mm & L:20 mm |
| DE-NZ-01-03 | Straight nozzle ID:2 mm & L:20 mm |
| DE-NZ-01-04 | Straight nozzle ID:1.5 mm & L:20 mm |
| DE-NZ-01-05 | Straight nozzle ID:1 mm & L:20 mm |
| DE-NZ-01-06 | Straight nozzle ID:1.5 mm & L:9 mm |
| DE-NZ-01-07 | Straight nozzle ID:1 mm & L:9 mm |
| DE-NZ-01-08 | Straight nozzle ID:2 mm x 2 & L:12 mm |
| DE-NZ-01-09 | Straight nozzle ID:1.8 mm x 3 & L:12 mm |
| DE-NZ-01-10 | Straight nozzle ID:0 mm & L:9 mm |
| DE-NZ-02-00 | Nozzle 45° simple ID:3 mm & L:15 mm |
| DE-NZ-02-01 | Nozzle curved 45° ID:2 mm & L:20 mm |
| DE-NZ-02-02 | Nozzle curved 45° ID:1.5 mm & L:20 mm |
| DE-NZ-02-03 | Nozzle curved 45° ID:1 mm & L:20 mm |
| DE-NZ-03-00 | Nozzle 90° ID:3 mm & L:15 mm |
| DE-NZ-03-01 | Nozzle 3 outlets at 90° ID:1.8 mm & L:15 mm |
| DE-NZ-03-02 | Nozzle 90° simple ID:3 mm & L:12 mm |
| DE-NZ-03-03 | Nozzle 90° simple ID:1.5 mm & L:12 mm |
| DE-NZ-03-04 | Nozzle 2 outlets at 90° simple ID:1.5 mm & L:12 mm |

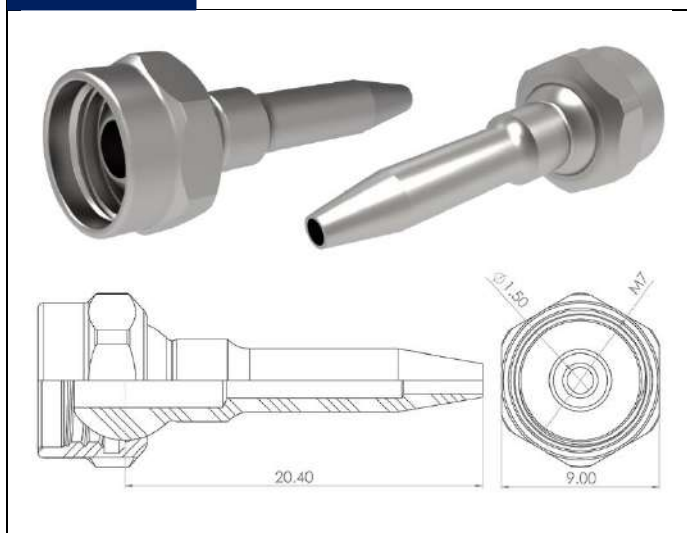




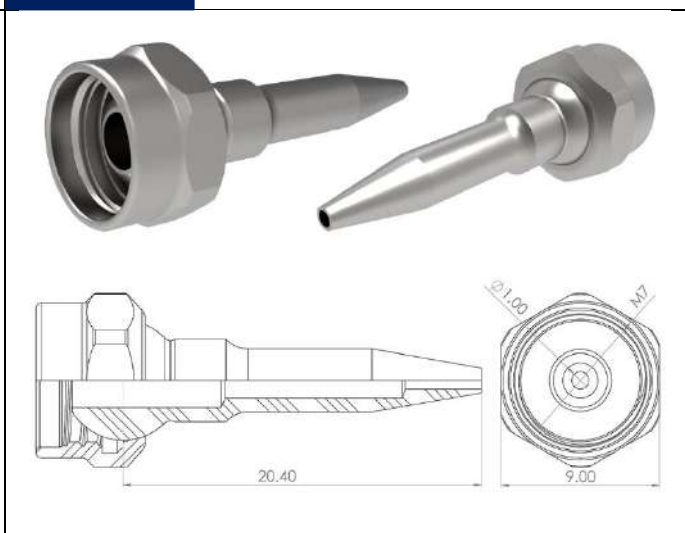
DE-NZ-01-02



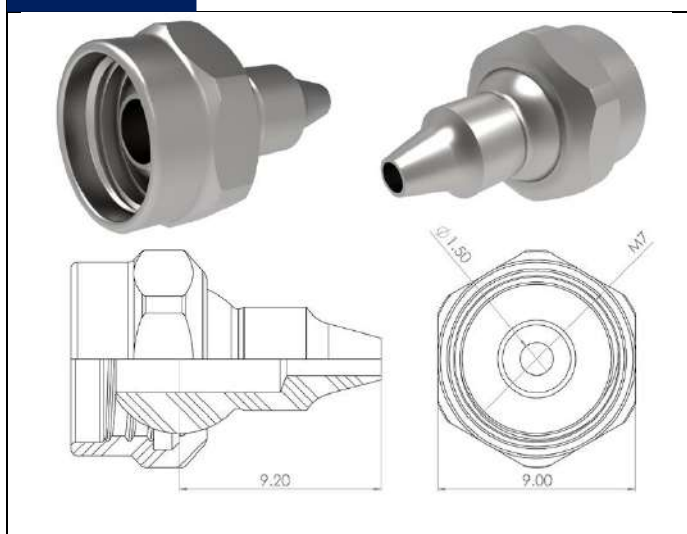
DE-NZ-01-03



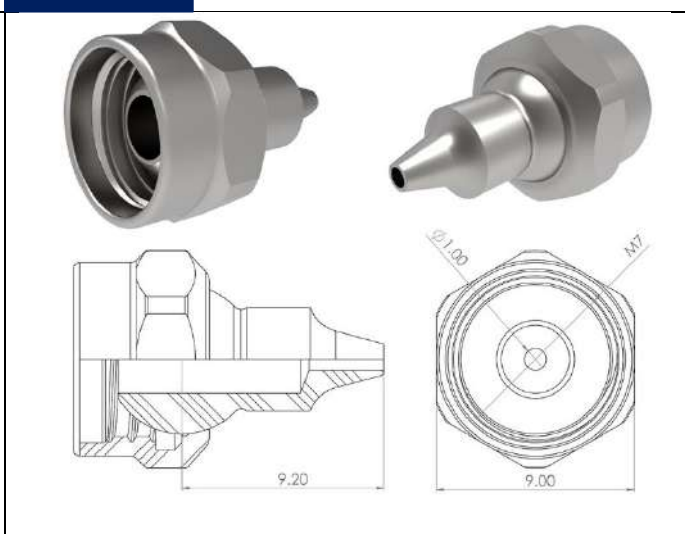
DE-NZ-01-04



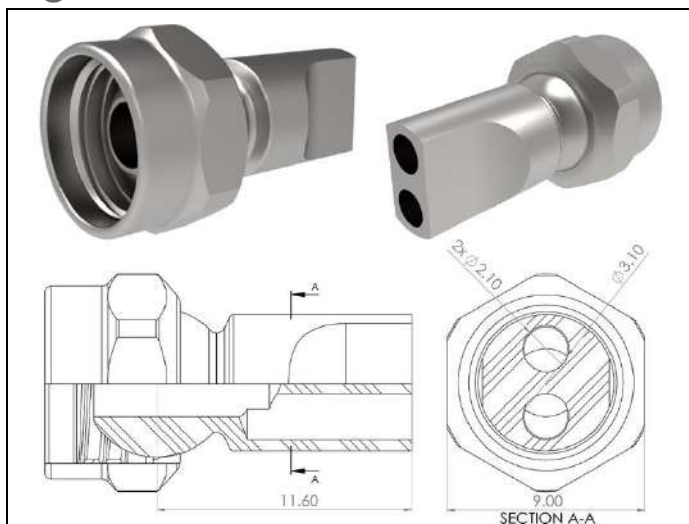
DE-NZ-01-05



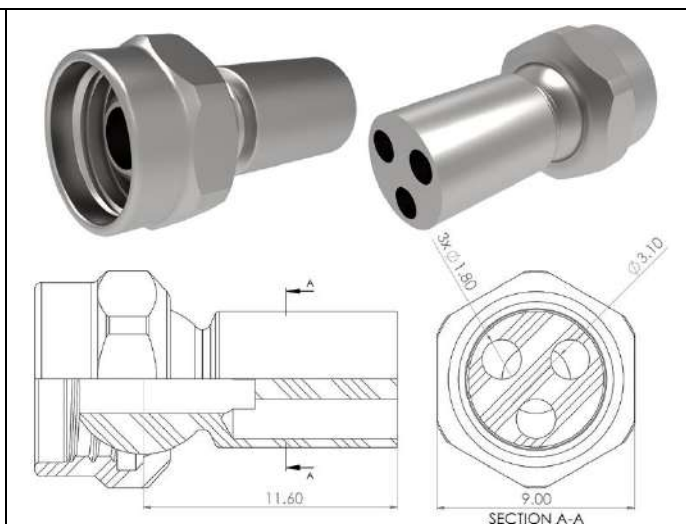
DE-NZ-01-06



DE-NZ-01-07



DE-NZ-01-08



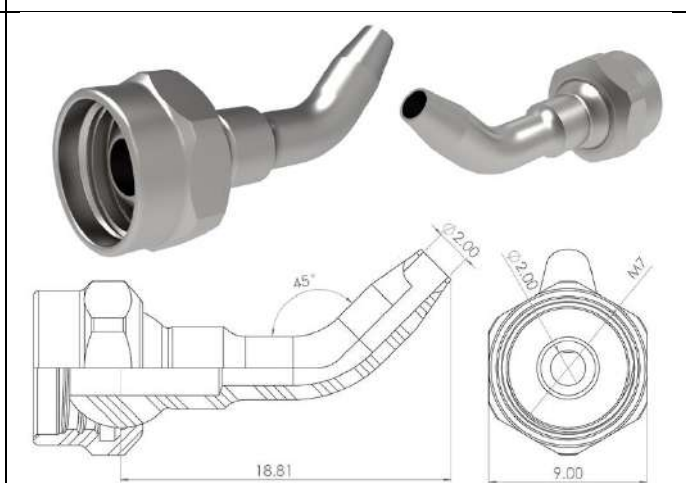
DE-NZ-01-09

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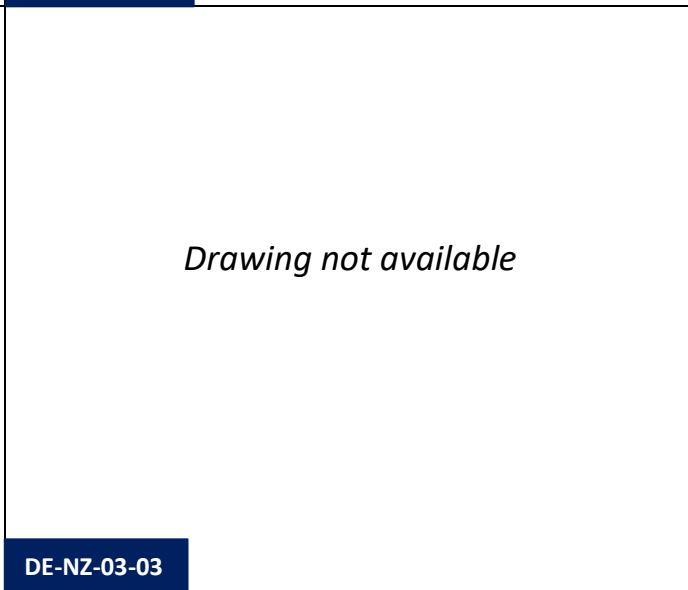
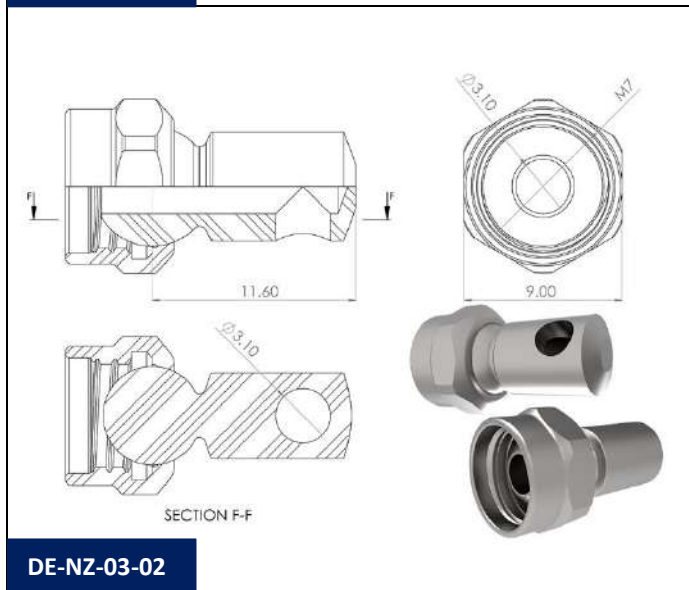
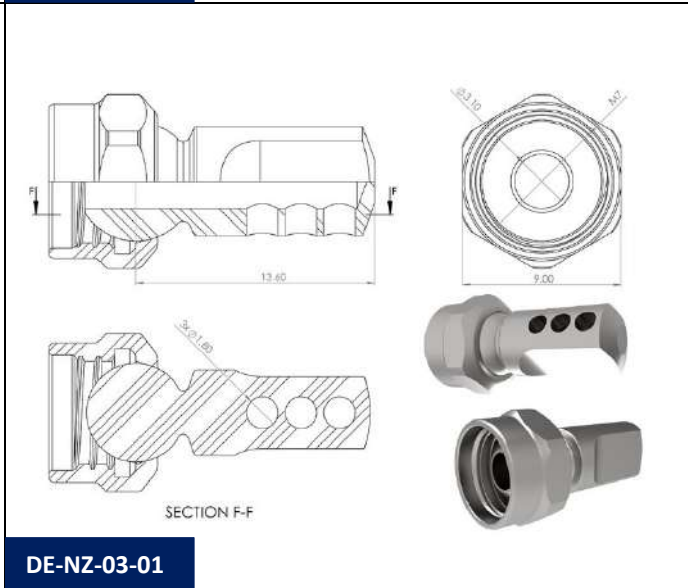
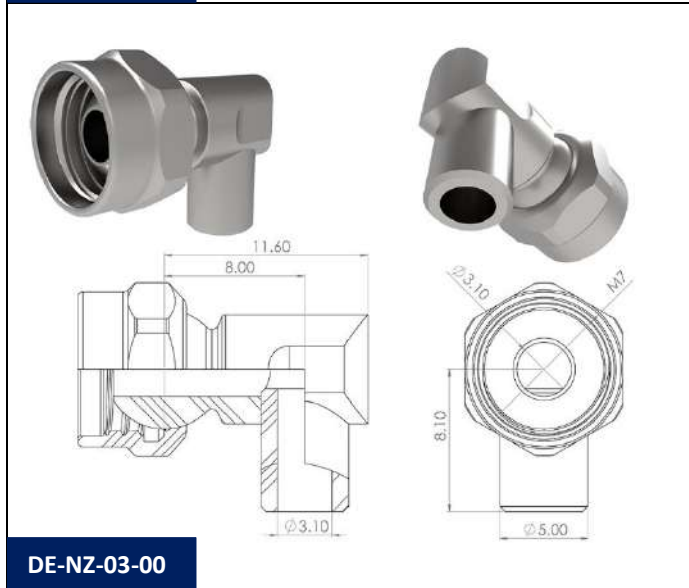
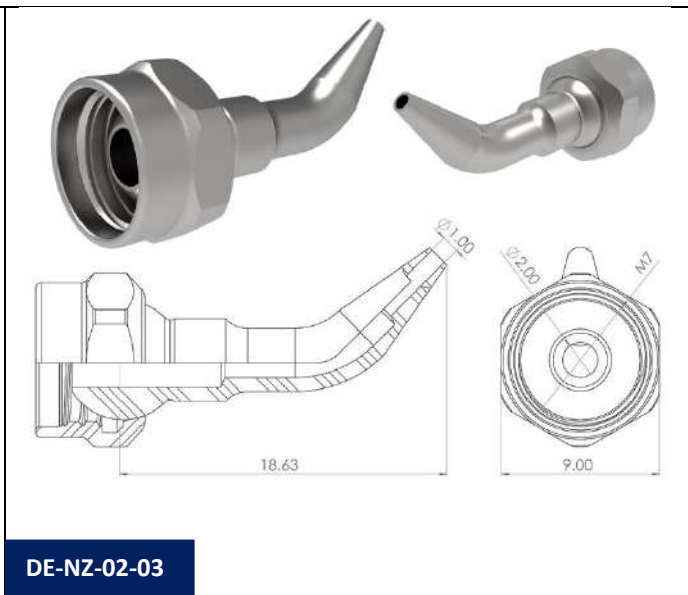
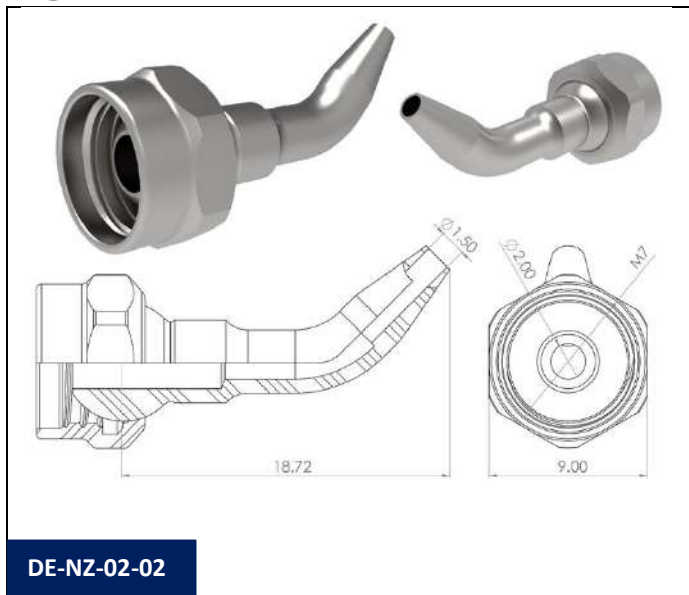
DE-NZ-01-10



DE-NZ-02-00



DE-NZ-02-01



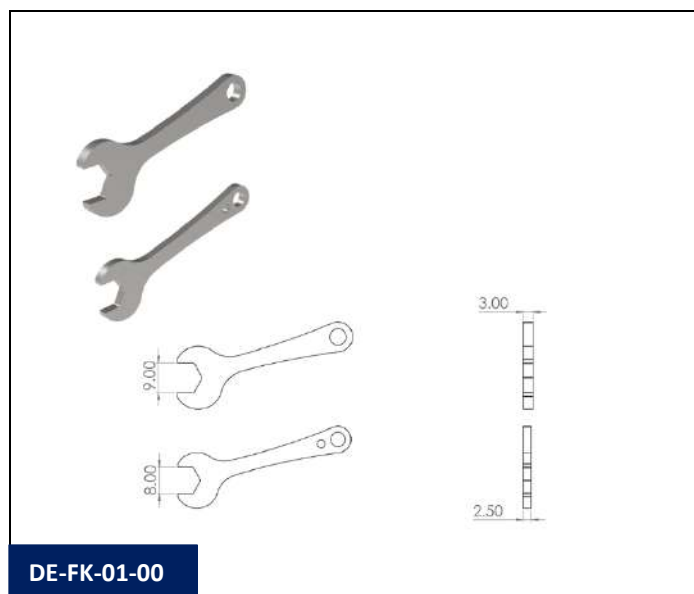
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DE-NZ-03-04

Fastening keys for the articulated system:

Special fastening wrenches for fastening the DECA articulated system.

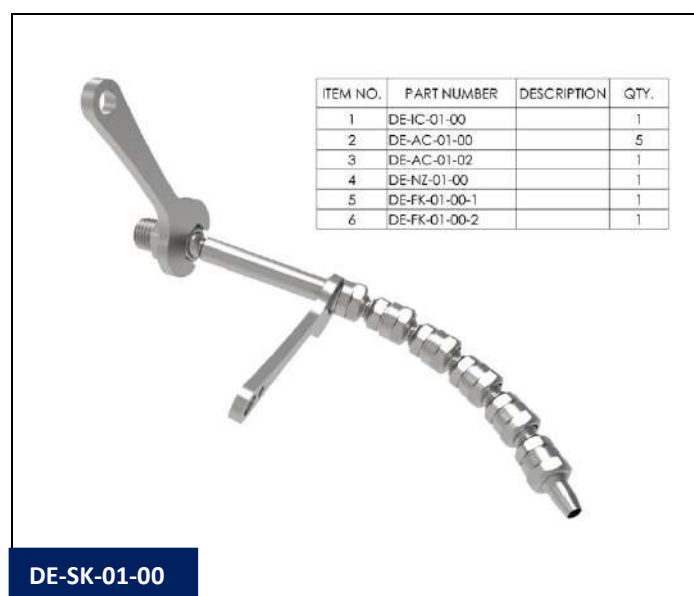
| Ref. | Description |
|-------------|--|
| DE-FK-01-00 | Wrenches for fastening the 2 hexagons used in the DECA program. SW8 & SW9. |



Starter kit:

Set of components to start and become familiar with the SCS Articulated Coolant Distribution System DECA program. Basic set of components delivered in a basic kit for the most typical applications.
Weight: 30 g.

| Ref. | Description |
|-------------|---|
| DE-SK-01-00 | <p>Kit Single Outlet DECA: For general cooling with a single outlet L=135 mm. Weight: 30 g.</p> <p>Initial Connection: 1 unit DE-IC-01-00 M8x1(M) to articulated connection DECA.</p> <p>Articulated connection: 5 unit DE-AC-01-00 Articulated connection DECA L:12.5 mm 1 unit DE-AC-01-02 Articulated connection DECA L:42.5 mm</p> <p>Coolant nozzles: 1 unit DE-NZ-01-00 Straight nozzle. ID:3 mm & L:9 mm</p> <p>Fastening keys for the articulated system: 1 unit DE-FK-01-00 Wrenches for fastening the 2 hexagons used in the DECA program. SW8 & SW9.</p> |



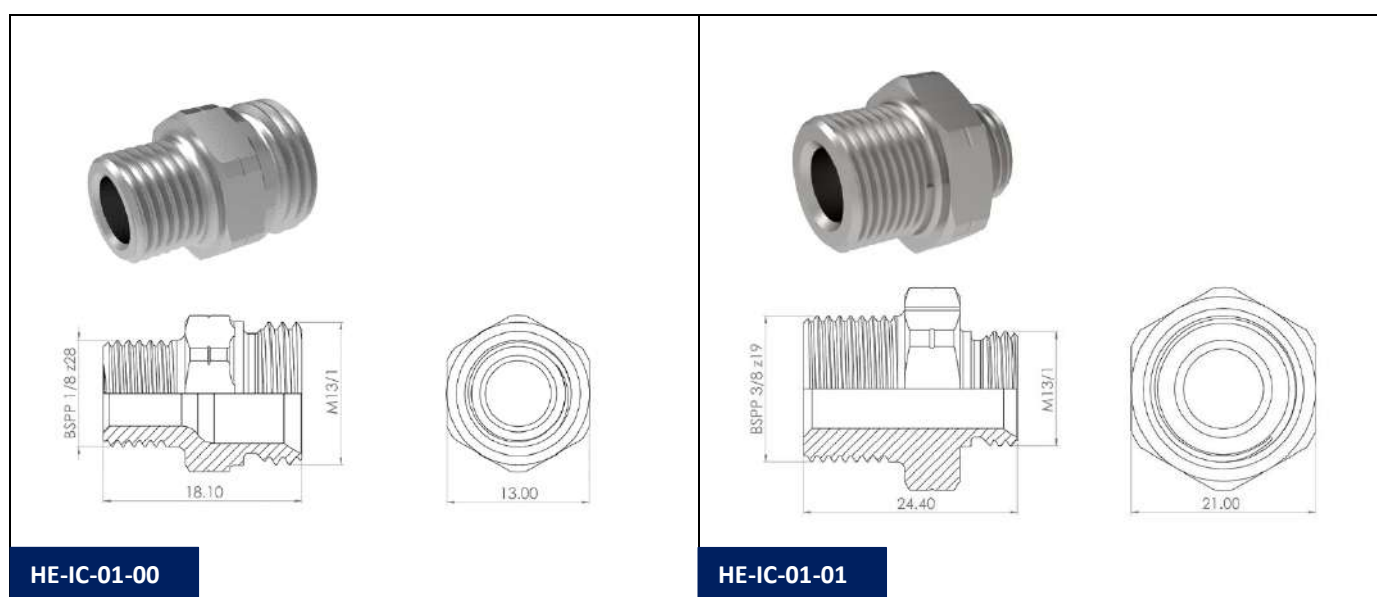
HECTO (6 mm) PROGRAM

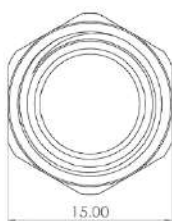
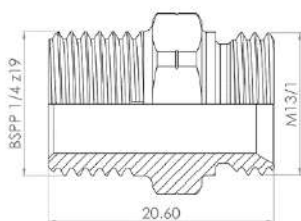
The internal through hole of the HECTO program is 6 mm and is ideal for the distribution of air and refrigerant (oil or emulsion) in small-sized machines such as Swiss-type CNC lathes, fixed-head CNC lathes, tapping centers, grinding machines or as distribution branches of bigger programs (MEGA or GIGA).
Maximum pressure: 100 Bar (1,450 psi)

Initial connection:

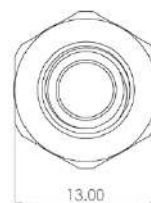
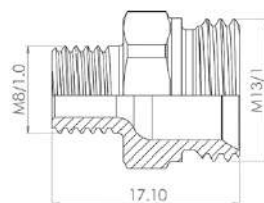
Connection elements with the machine-tool or other SCS coolant distribution programs. ID:6 mm.
Material: Steel

| Ref. | Description |
|-------------|--|
| HE-IC-01-00 | BSP 1/8"(M) to articulated connection HECTO. |
| HE-IC-01-01 | BSP 3/8"(M) to articulated connection HECTO. |
| HE-IC-01-02 | BSP 1/4"(M) to articulated connection HECTO. |
| HE-IC-01-03 | M8x1(M) to articulated connection HECTO. |
| HE-IC-01-04 | M10x1(M) to articulated connection HECTO. |
| HE-IC-01-05 | NPT 1/8"(M) to articulated connection HECTO. |
| HE-IC-01-06 | NPT 3/8"(M) to articulated connection HECTO. |
| HE-IC-01-07 | NPT 1/4"(M) to articulated connection HECTO. |
| HE-IC-01-08 | BSPT 1/4"(M) to articulated connection HECTO. |
| HE-IC-02-00 | Ball OD:10 mm to articulated connection HECTO. |
| HE-IC-02-01 | Ball OD:12 mm to articulated connection HECTO. |
| HE-IC-02-02 | Ball OD:14 mm to articulated connection HECTO. |
| HE-IC-02-03 | Ball OD:15 mm to articulated connection HECTO. |

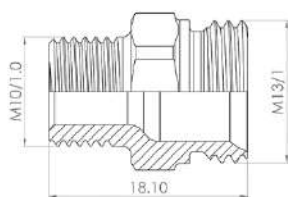




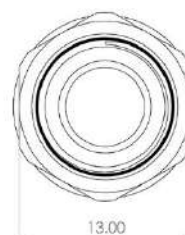
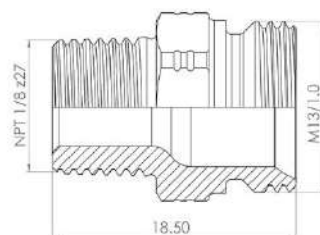
HE-IC-01-02



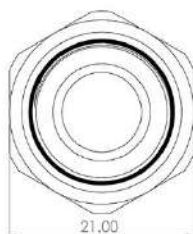
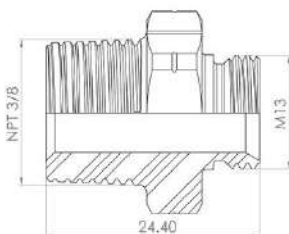
HE-IC-01-03



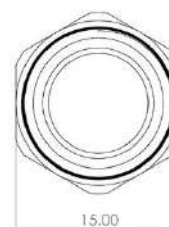
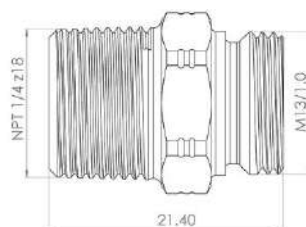
HE-IC-01-04



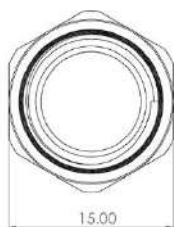
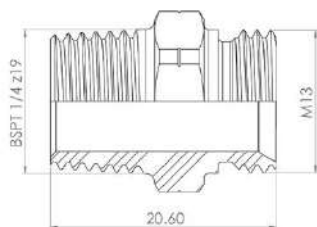
HE-IC-01-05



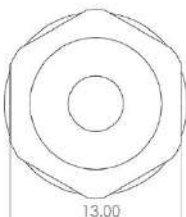
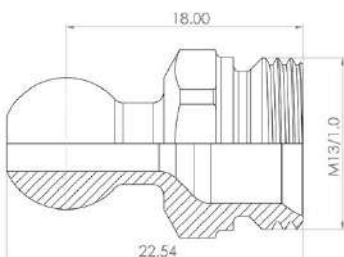
HE-IC-01-06



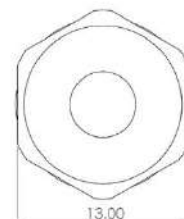
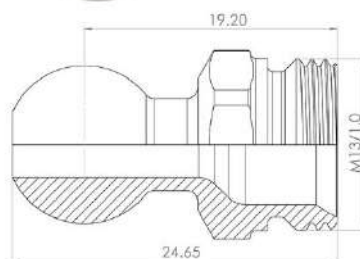
HE-IC-01-07



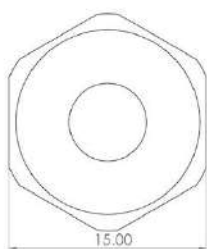
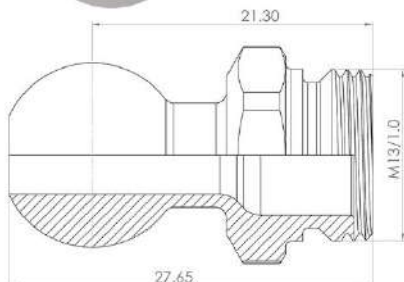
HE-IC-01-08



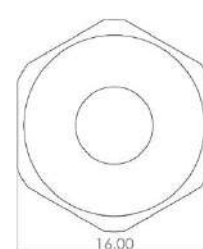
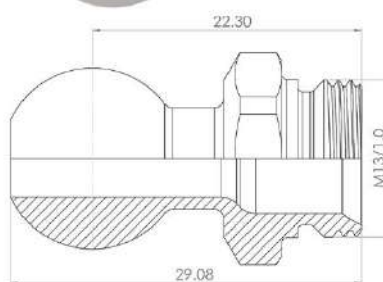
HE-IC-02-00



HE-IC-02-01



HE-IC-02-02



HE-IC-02-03

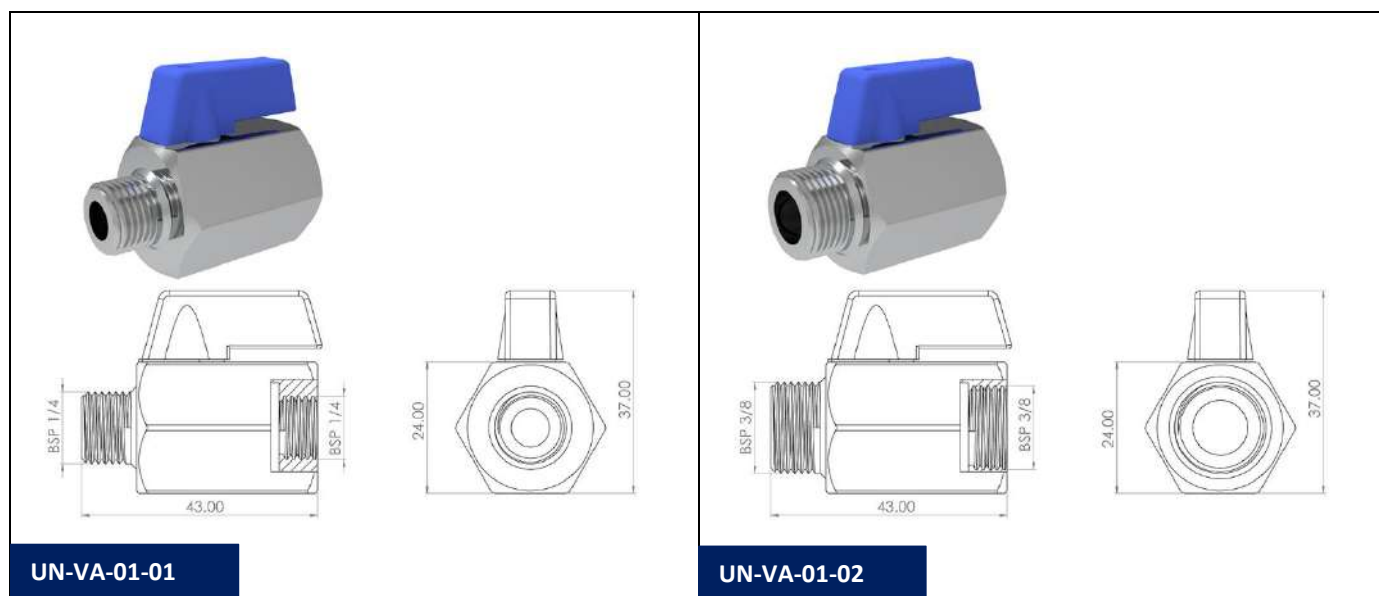
Ball valves:

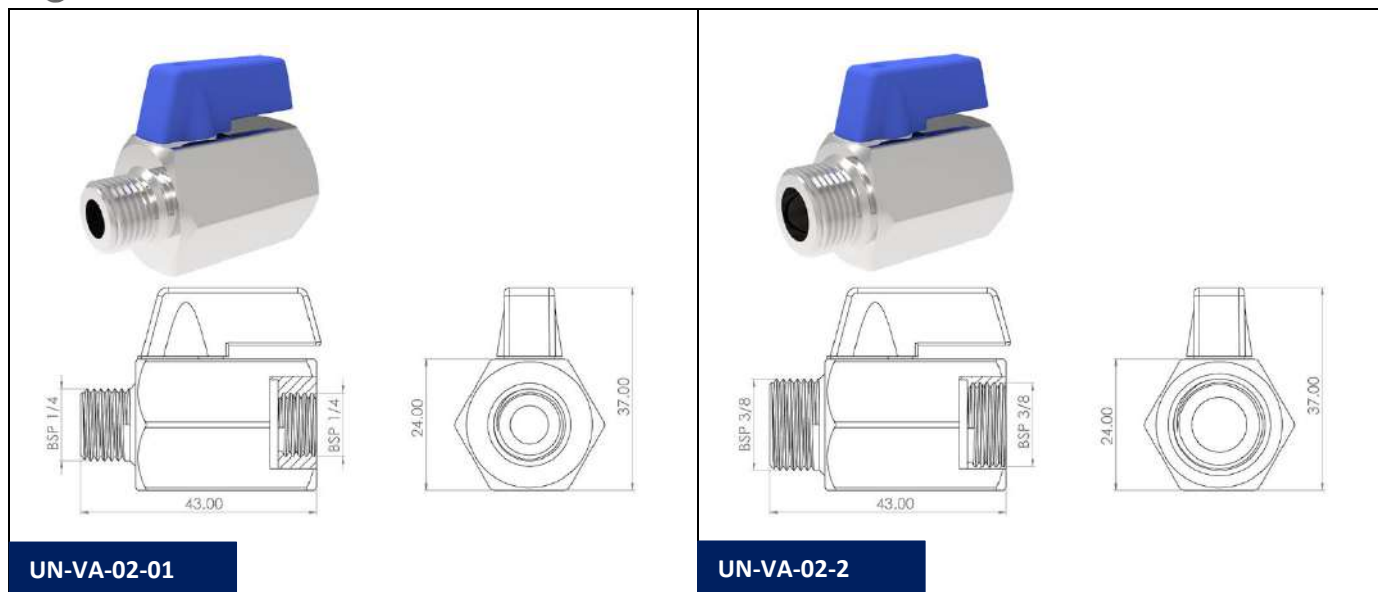
Miniature ball valves for shut-off or control of the coolant flow. To be installed at the machine-tool coolant outlet.

Types:

- PN10: Pressure 10 bar (145 psi). Material: Chrome plated brass.
- PN63: Pressure 63 bar (914 psi). Material: Stainless steel AISI-316

| Ref. | Description |
|-------------|---|
| UN-VA-01-00 | Closing valve PN10, BSP1/8"(M) and BPS1/8"(F) chromed-plated brass. |
| UN-VA-01-01 | Closing valve PN10, BSP1/4"(M) and BPS1/4"(F) chromed-plated brass. |
| UN-VA-01-02 | Closing valve PN10, BSP3/8"(M) and BPS3/8"(F) chromed-plated brass. |
| UN-VA-02-01 | Closing valve PN63, BSP1/4"(M) and BPS1/4"(F) AISI-316 |
| UN-VA-02-02 | Closing valve PN63, BSP3/8"(M) and BPS3/8"(F) AISI-316 |



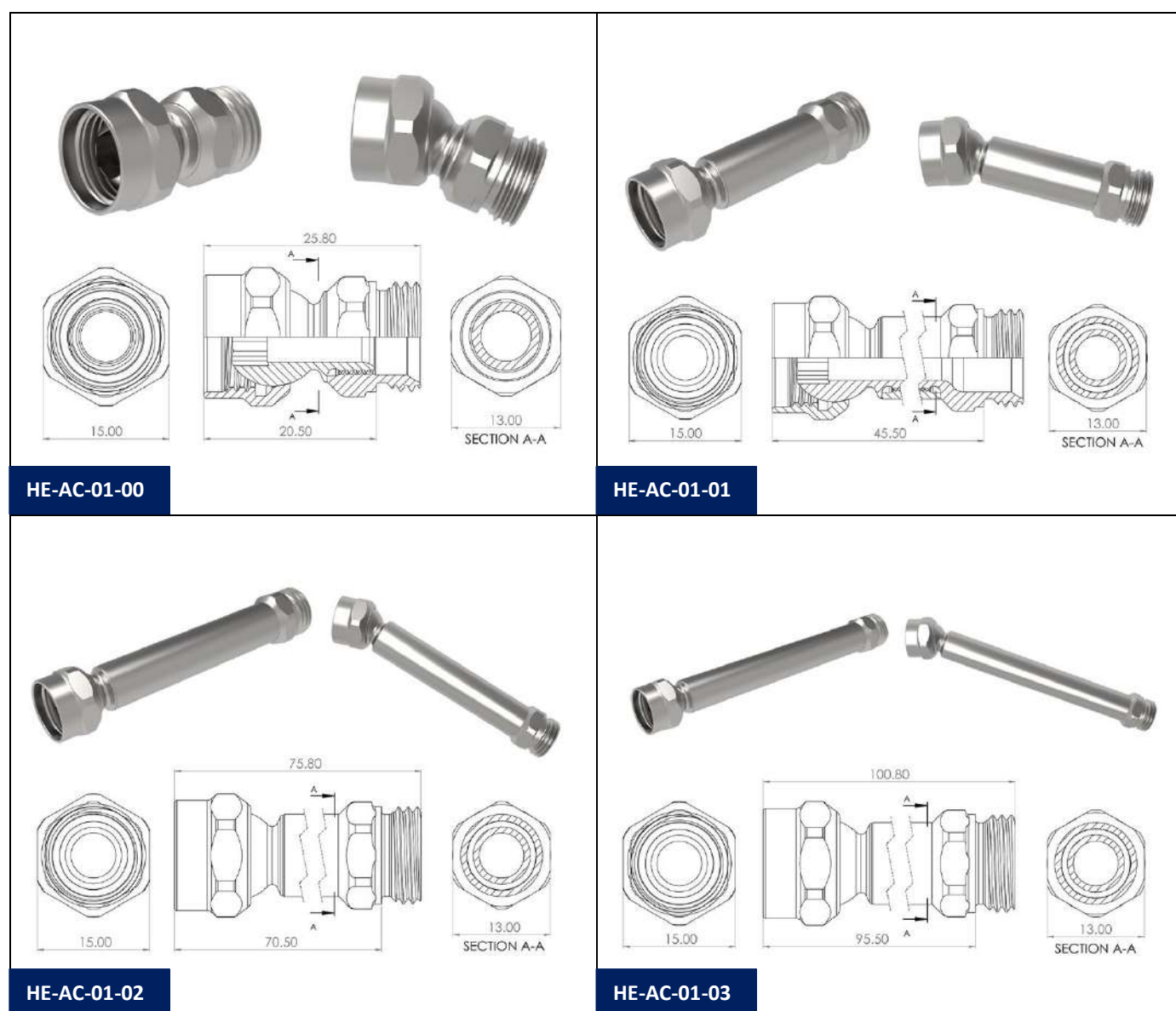


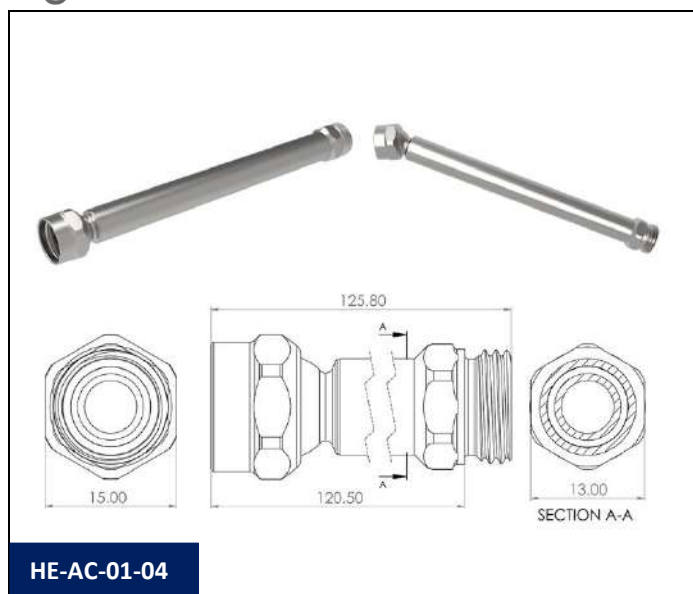
Articulated connection:

Basic articulated elements which connect to each other. Swiveling $\pm 25^\circ$. ID:6 mm.

Material: Steel

| Ref. | Description |
|-------------|---|
| HE-AC-01-00 | Articulated connection HECTO L:20.5 mm |
| HE-AC-01-01 | Articulated connection HECTO L:45.5 mm |
| HE-AC-01-02 | Articulated connection HECTO L:70.5 mm |
| HE-AC-01-03 | Articulated connection HECTO L:95.5 mm |
| HE-AC-01-04 | Articulated connection HECTO L:120.5 mm |
| HE-AC-02-00 | Articulated connection to 90° HECTO |



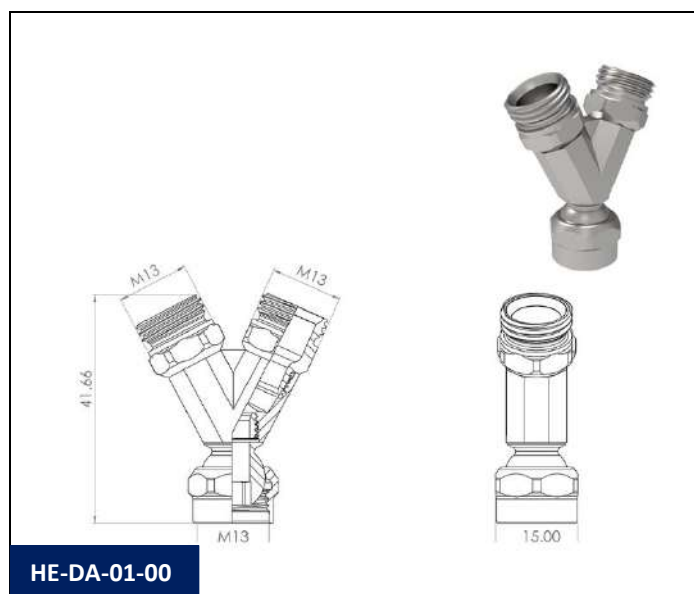


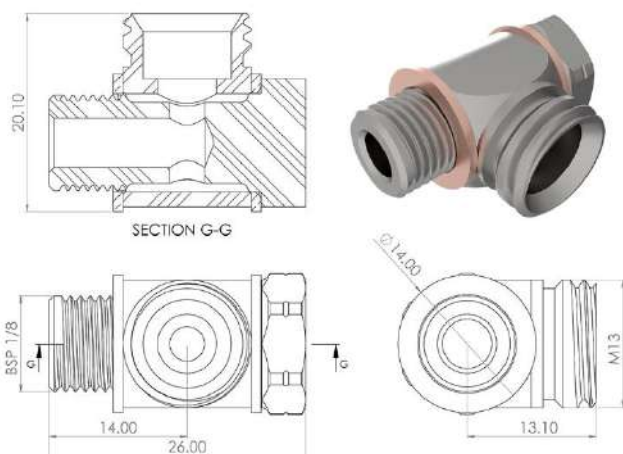
Distributors and adaptors:

Coolant distribution components, expansion of articulated lines and adaption to other SCS coolant distribution systems.

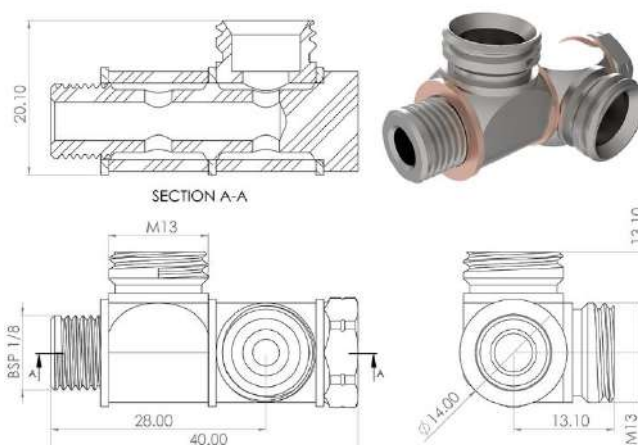
Material: Steel

| Ref. | Description |
|-------------|--|
| HE-DA-01-00 | "Y" distributor to articulated connection HECTO |
| HE-DA-02-00 | Short banjo HECTO connection with banjo bolt BSP 1/8"(M) and sealing gaskets in copper |
| HE-DA-02-01 | Two short banjos HECTO connection with long banjo bolt BSP 1/8"(M) and sealing gaskets in copper |
| HE-DA-03-00 | Expandable distributor with 90º outlets. Includes connection to machine BSPT 1/4", short banjo HECTO connection and banjo bolt |
| HE-DA-03-01 | Additional outlet for distributor HE-DA-03-00. Includes short banjo HECTO connection and banjo bolt for expansion |

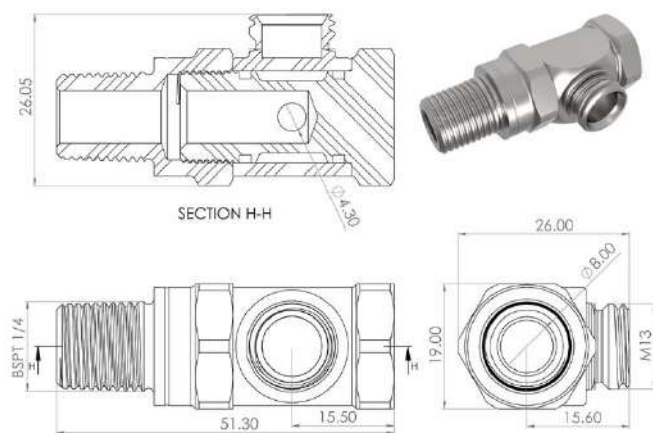




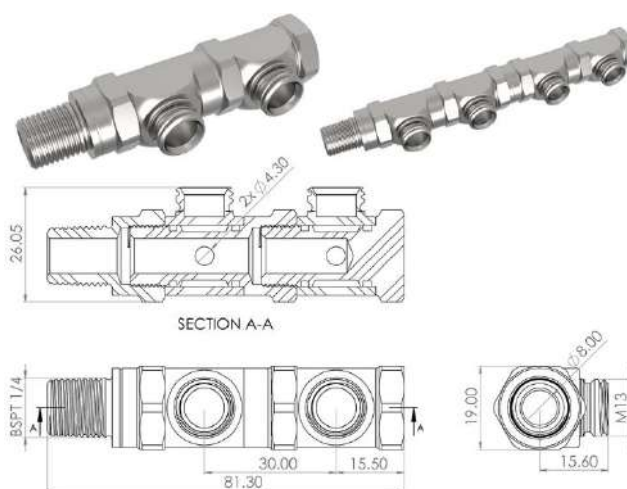
HE-DA-02-00



HE-DA-02-01



HE-DA-03-00



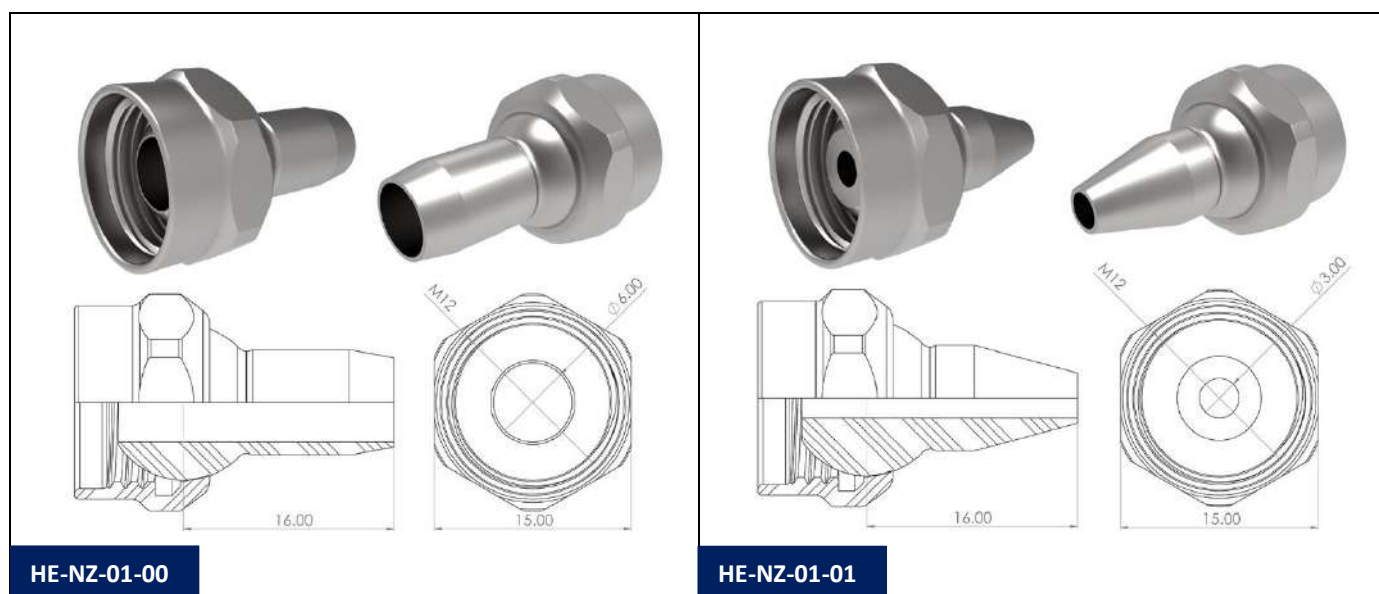
HE-DA-03-01

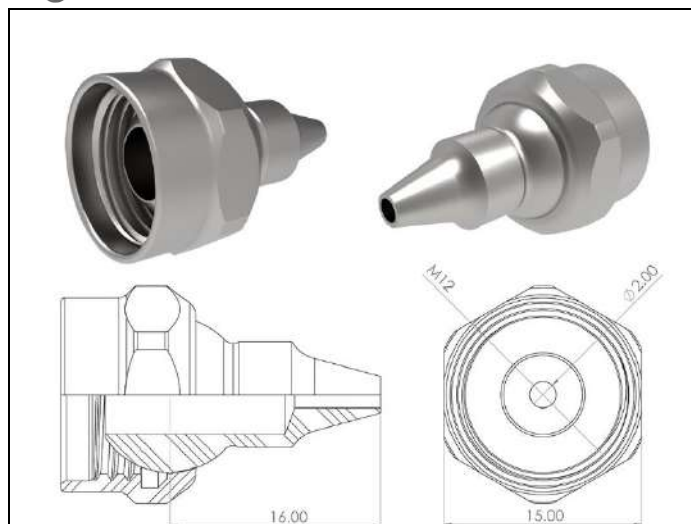
Coolant nozzles:

Nozzles with several designs adapted to meet different coolant delivery requirements.

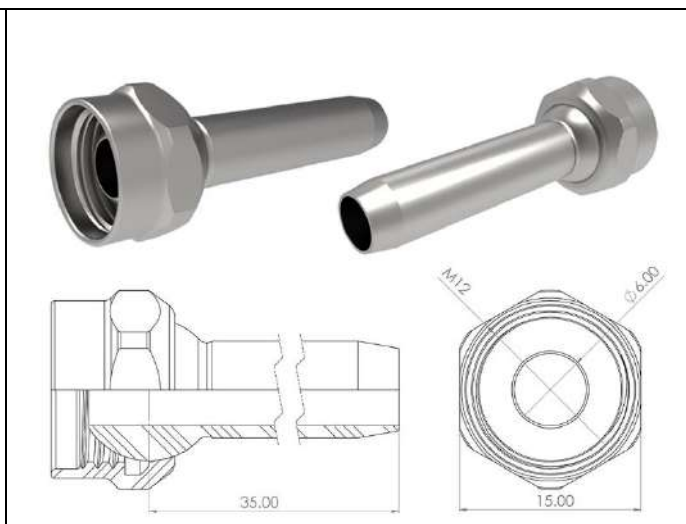
Material: Steel

| Ref. | Description |
|-------------|---|
| HE-NZ-01-00 | Straight nozzle. ID:6 mm & L:16 mm |
| HE-NZ-01-01 | Straight nozzle. ID:3 mm & L:16 mm |
| HE-NZ-01-02 | Straight nozzle. ID:2 mm & L:16 mm |
| HE-NZ-01-03 | Straight nozzle. ID:6 mm & L:35 mm |
| HE-NZ-01-04 | Straight nozzle. ID:3 mm & L:35 mm |
| HE-NZ-01-05 | Straight nozzle. ID:3 mm x 3 & L:20 mm |
| HE-NZ-01-06 | Straight nozzle coaxial. ID:3.4 x 3 & L=20 mm |
| HE-NZ-01-07 | Straight nozzle coaxial. ID:2.7 x 5 & L=20 mm |
| HE-NZ-01-08 | Straight nozzle. ID:1 mm & L:16 mm |
| HE-NZ-02-00 | Nozzle 45°. ID:6 mm & L:23.5 mm |
| HE-NZ-02-01 | Nozzle 45° simple. ID:6 mm & L:20 mm |
| HE-NZ-03-00 | Nozzle 90°. ID:6 mm & L:20 mm |
| HE-NZ-03-01 | Nozzle 90°. ID:3.4 mm x 3 & L:24 mm |
| HE-NZ-03-02 | Nozzle 90° simple. ID:6 mm & L:20 mm |

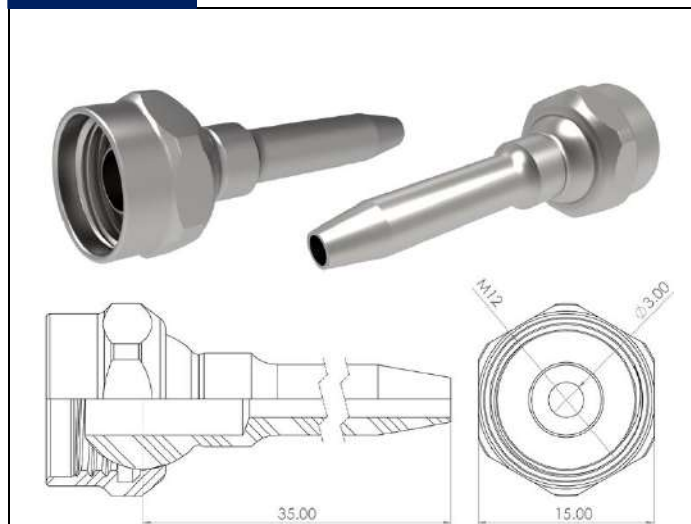




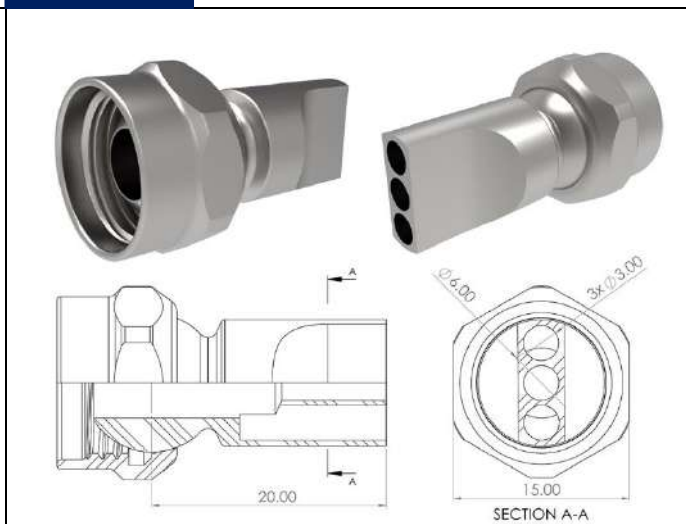
HE-NZ-01-02



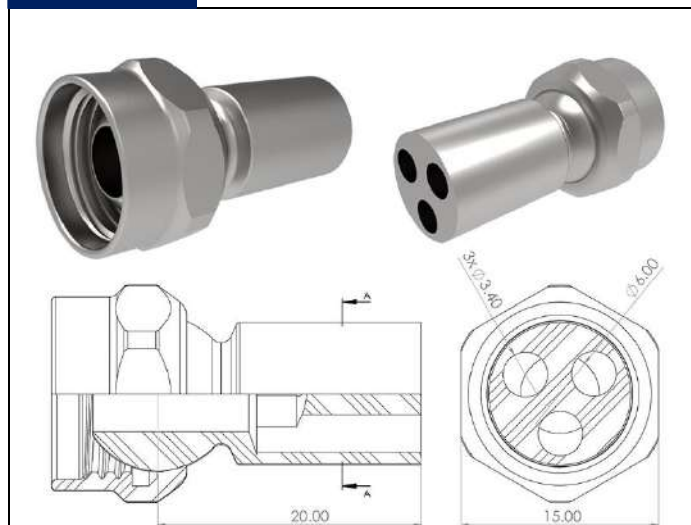
HE-NZ-01-03



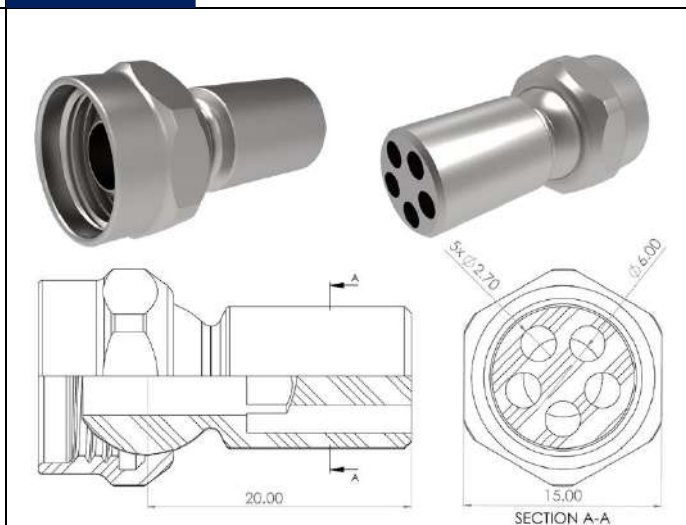
HE-NZ-01-04



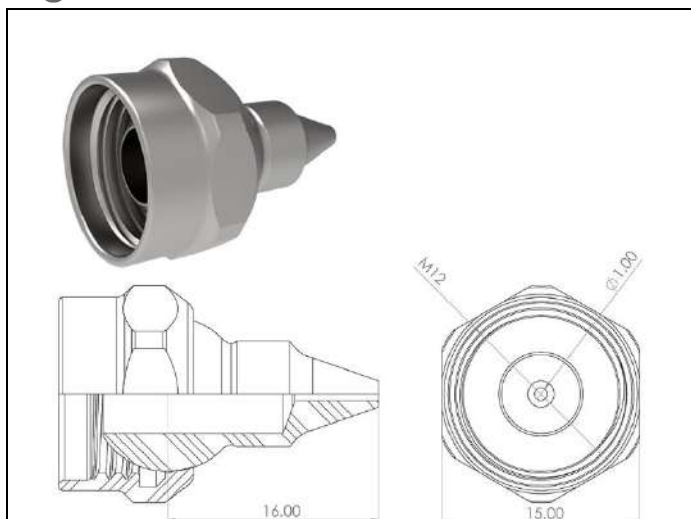
HE-NZ-01-05



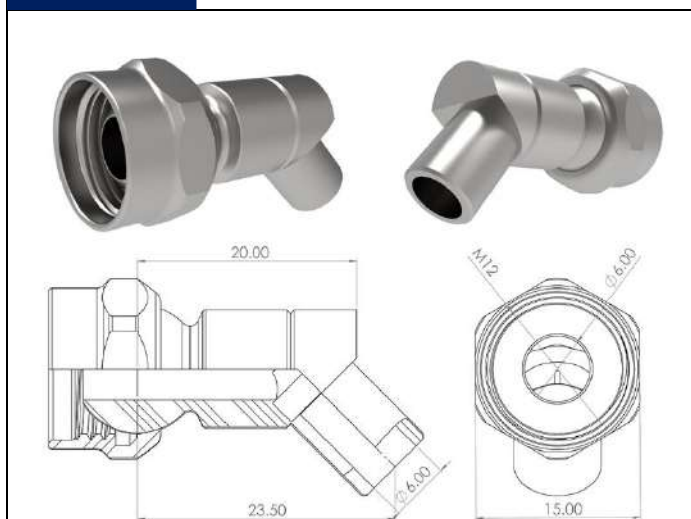
HE-NZ-01-06



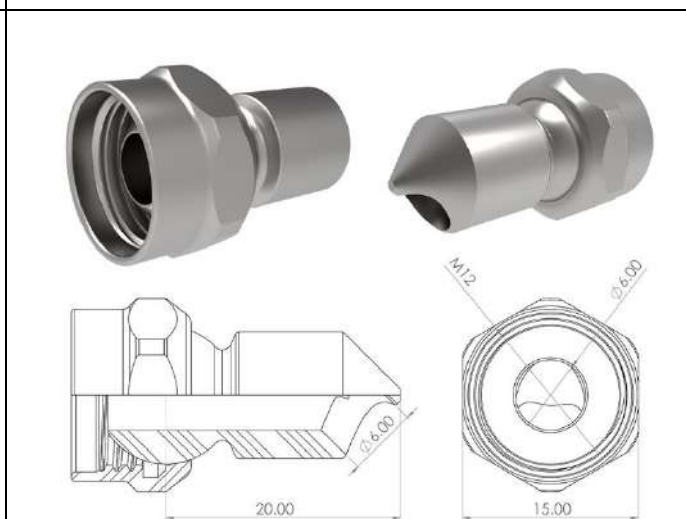
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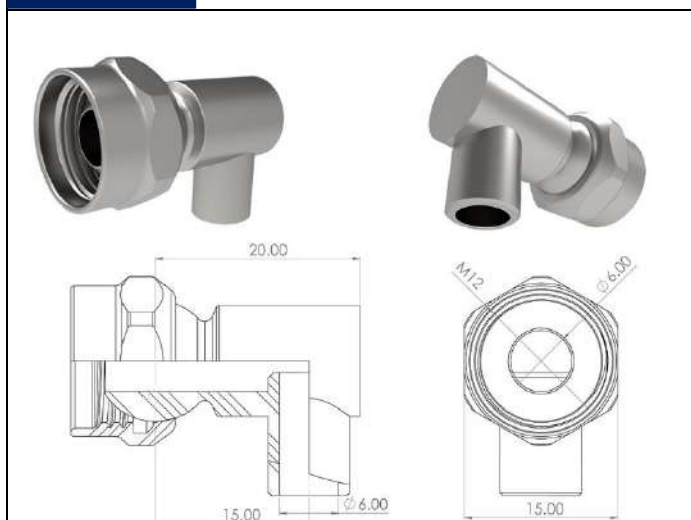
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HE-NZ-02-00



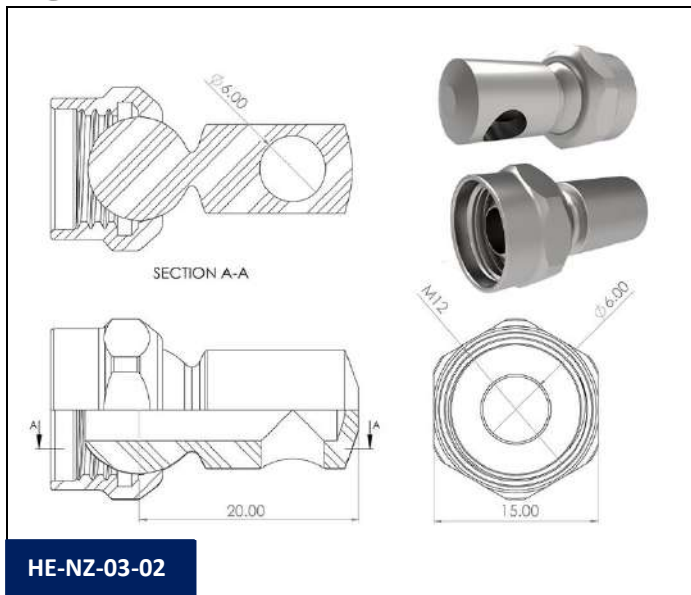
HE-NZ-02-01



HE-NZ-03-00



HE-NZ-03-01



Fastening keys for the articulated system:

Special fastening wrenches for fastening the HECTO articulated system.

| Ref. | Description |
|-------------|---|
| HE-FK-01-00 | Wrenches for fastening the 2 hexagons used in the HECTO program. SW13 & SW15. |



Starter kit:

Set of components to start and become familiar with the SCS Articulated Coolant Distribution System DECA program. Basic set of components delivered in a basic kit for the most typical applications.

Weight: 120 g.

| Ref. | Description |
|-------------|---|
| HE-SK-01-00 | <p>Kit Single Outlet HECTO: For general cooling with a single outlet L=220 mm. Weight: 120 g.</p> <p>Initial Connection: 1 unit HE-IC-01-00 BSP 1/8"(M) to articulated connection HECTO.</p> <p>Articulated connection: 5 units HE-AC-01-00 Articulated connection HECTO L:20.5 mm 1 unit HE-AC-01-02 Articulated connection HECTO L:70.5 mm</p> <p>Coolant nozzles: 1 unit HE-NZ-01-00 Straight nozzle. ID:6 mm & L:16 mm</p> <p>Fastening wrenches for the articulated system: 1 unit HE-FK-01-00 Wrenches for fastening the 2 hexagons used in the HECTO program. SW13 & SW15.</p> |



MEGA (10.5 mm) PROGRAM

The internal through hole of the MEGA program is 10.5 mm and is ideal for the distribution of air and refrigerant (oil or emulsion) in medium and large-sized machines such as CNC lathes, machining centers, grinding machines or as distribution branches of the biggest program (GIGA).

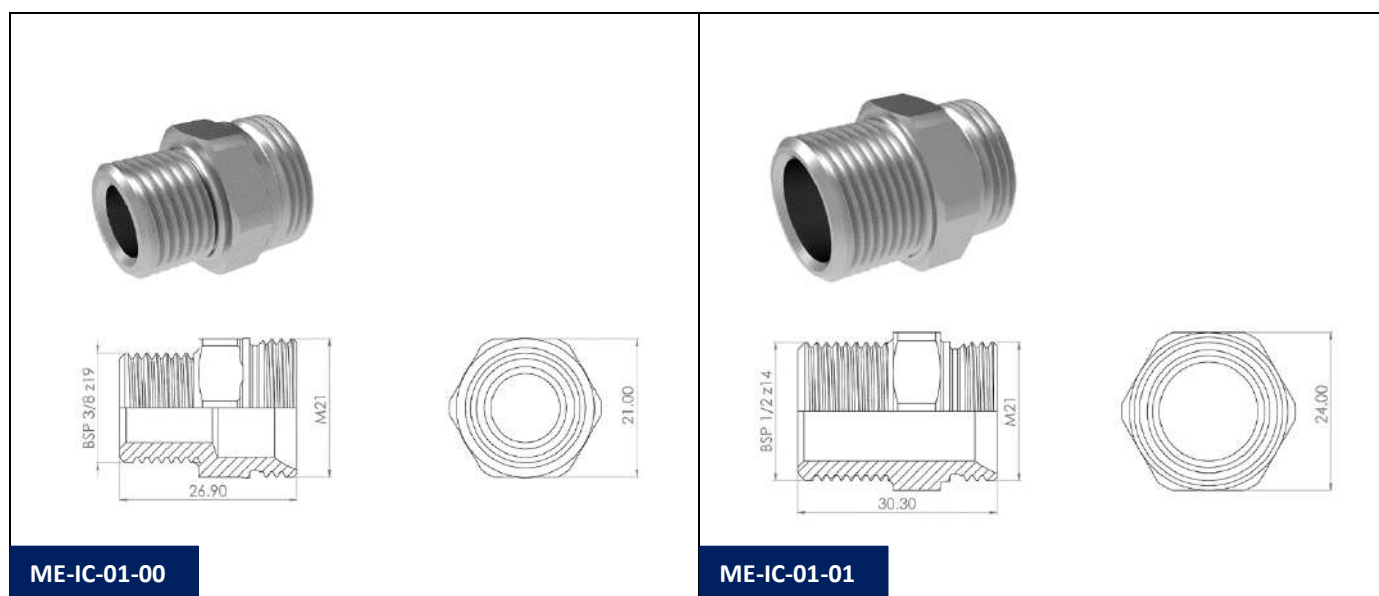
Maximum pressure: 80 Bar (1,160 psi)

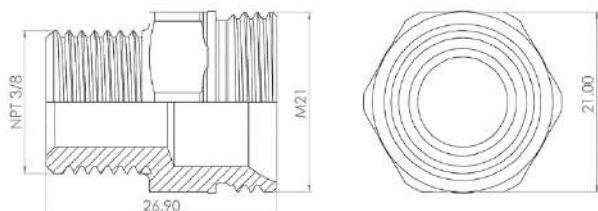
Initial connection:

Connection elements with the machine-tool or other SCS coolant distribution programs. ID:10.5 mm.

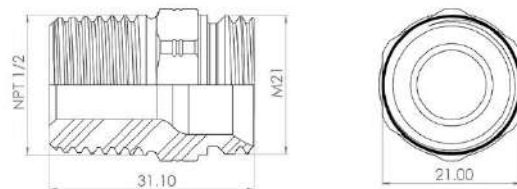
Material: Steel

| Ref. | Description |
|-------------|--|
| ME-IC-01-00 | BSP 3/8"(M) to articulated connection MEGA. |
| ME-IC-01-01 | BSP 1/2"(M) to articulated connection MEGA. |
| ME-IC-01-02 | NPT 3/8"(M) to articulated connection MEGA. |
| ME-IC-01-03 | NPT 1/2"(M) to articulated connection MEGA. |
| ME-IC-01-04 | BSPT 3/8"(M) to articulated connection MEGA. |
| ME-IC-01-05 | BSPT 1/2"(M) to articulated connection MEGA. |

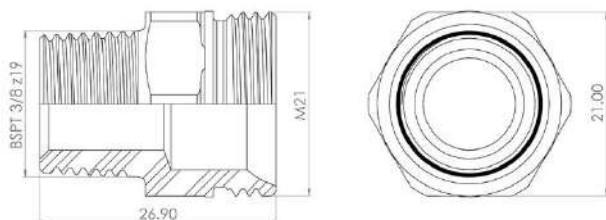




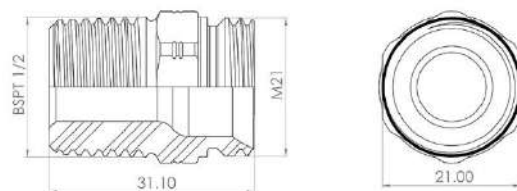
ME-IC-01-02



ME-IC-01-03



ME-IC-01-04



ME-IC-01-05

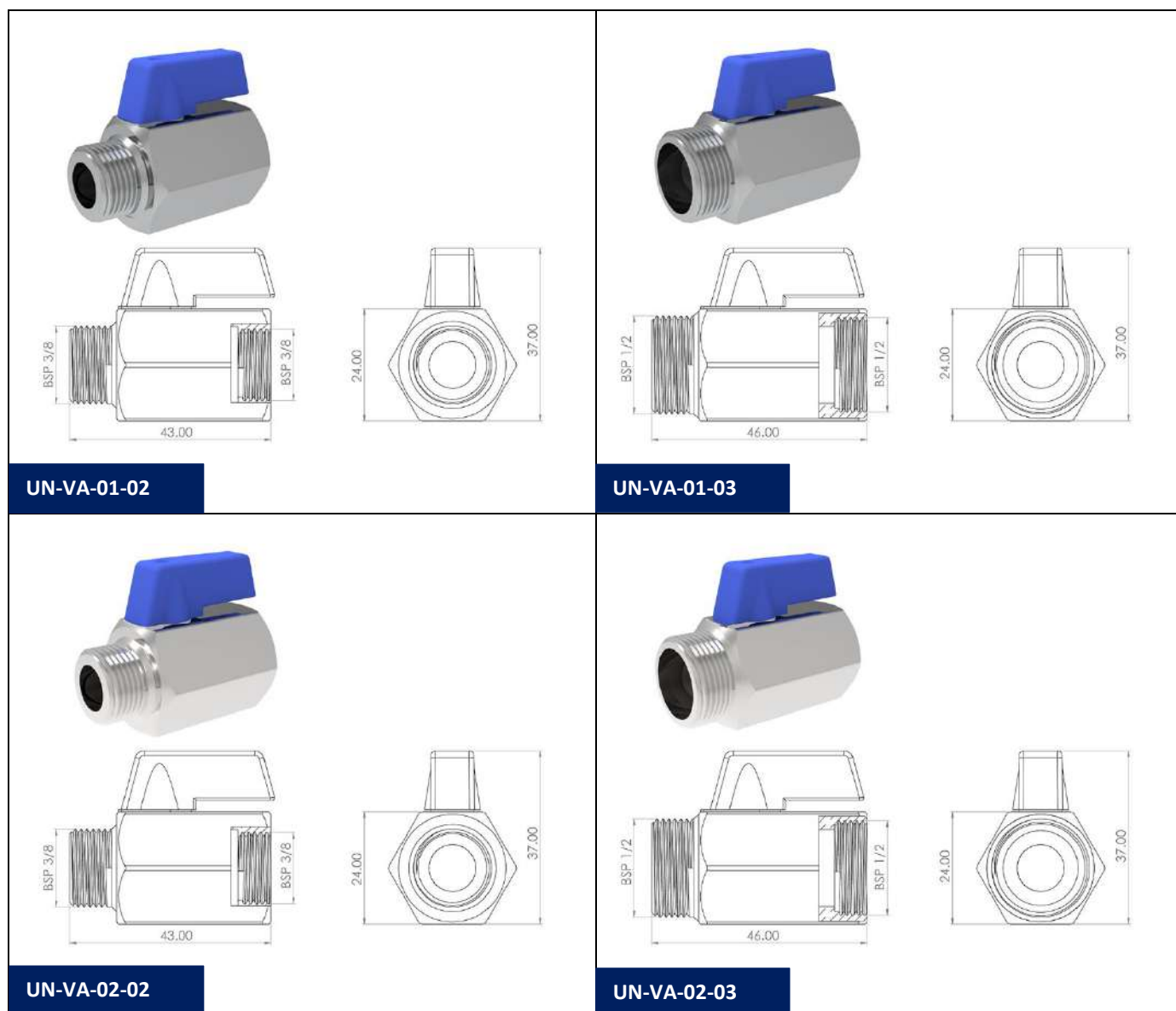
Ball valves:

Miniature ball valves for shut-off or control of the coolant flow. To be installed at the machine-tool coolant outlet.

Types:

- PN10: Pressure 10 bar (145 psi). Material: Chrome plated brass.
- PN63: Pressure 63 bar (914 psi). Material: Stainless steel AISI-316

| Ref. | Description |
|-------------|---|
| UN-VA-01-02 | Closing valve PN10, BSP3/8"(M) and BPS3/8"(F) chromed-plated brass. |
| UN-VA-01-03 | Closing valve PN10, BSP1/2"(M) and BPS1/2"(F) chromed-plated brass. |
| UN-VA-02-02 | Closing valve PN63, BSP3/8"(M) and BPS3/8"(F) AISI-316 |
| UN-VA-02-03 | Closing valve PN63, BSP1/2"(M) and BPS1/2"(F) AISI-316 |

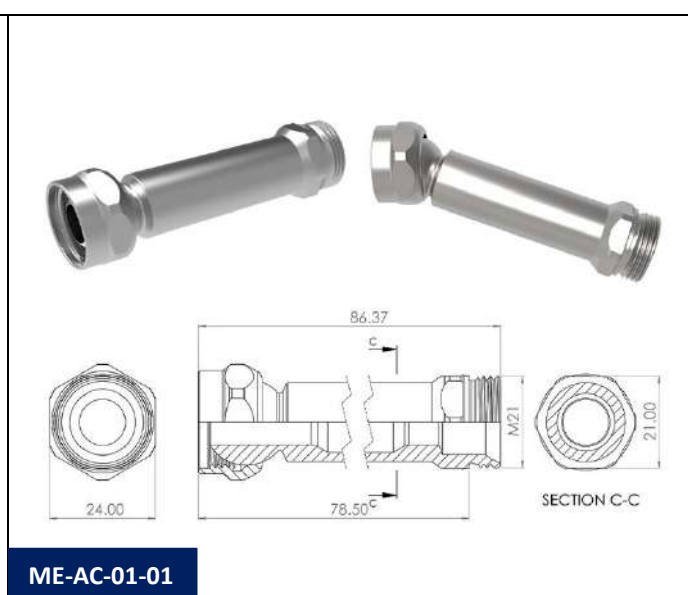


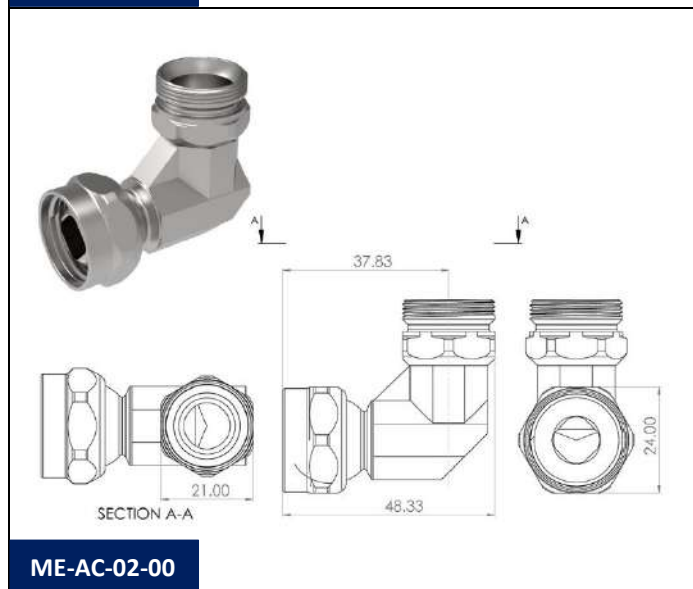
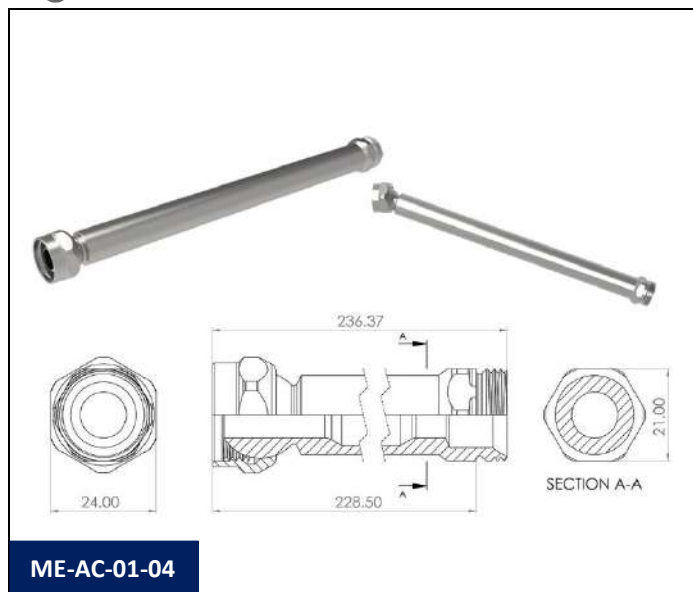
Articulated connection:

Basic articulated elements which connect to each other. Swiveling $\pm 25^\circ$. ID:10.5 mm.

Material: Steel

| Ref. | Description |
|-------------|--|
| ME-AC-01-00 | Articulated connection MEGA L:28.5 mm |
| ME-AC-01-01 | Articulated connection MEGA L:78.5 mm |
| ME-AC-01-02 | Articulated connection MEGA L:128.5 mm |
| ME-AC-01-03 | Articulated connection MEGA L:178.5 mm |
| ME-AC-01-04 | Articulated connection MEGA L:228.5 mm |
| ME-AC-02-00 | Articulated connection to 90° MEGA |



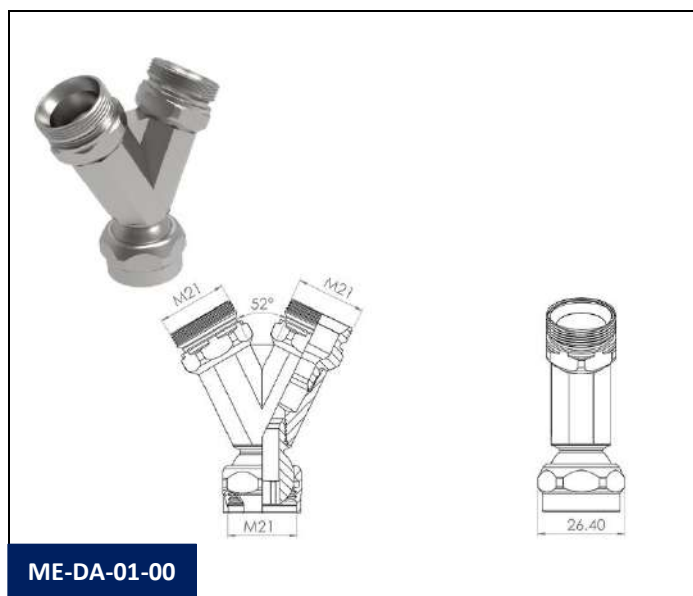


Distributors and adaptors:

Coolant distribution components, expansion of articulated lines and adaption to other SCS coolant distribution systems.

Material: Steel

| Ref. | Description |
|-------------|--|
| ME-DA-01-00 | "Y" distributor to articulated connection MEGA |

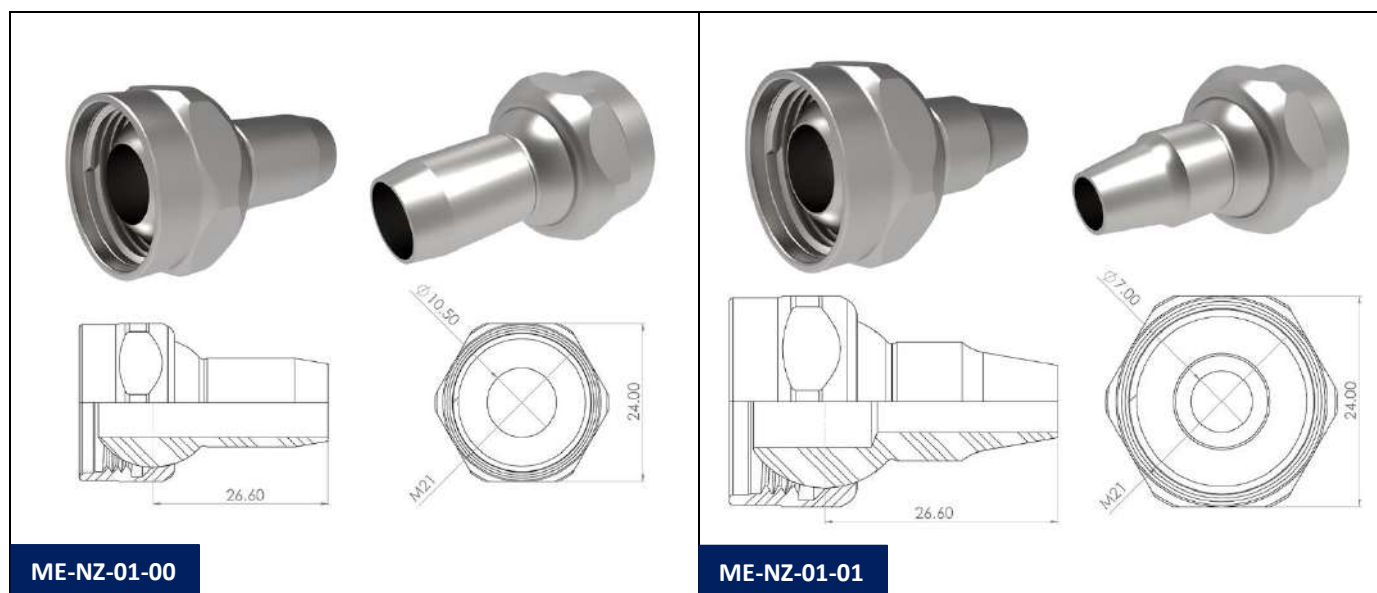


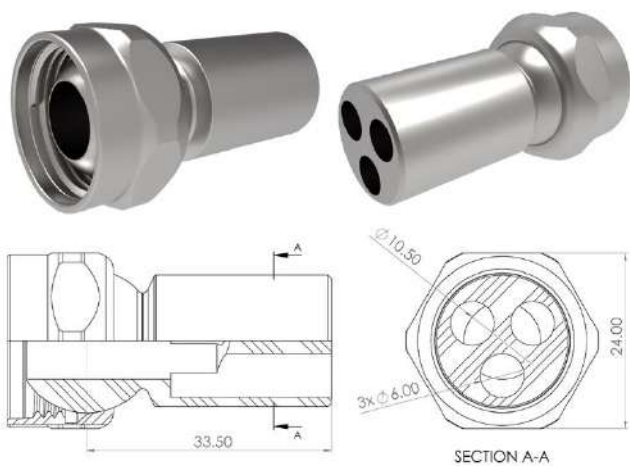
Coolant nozzles:

Nozzles with several designs adapted to meet different coolant delivery requirements.

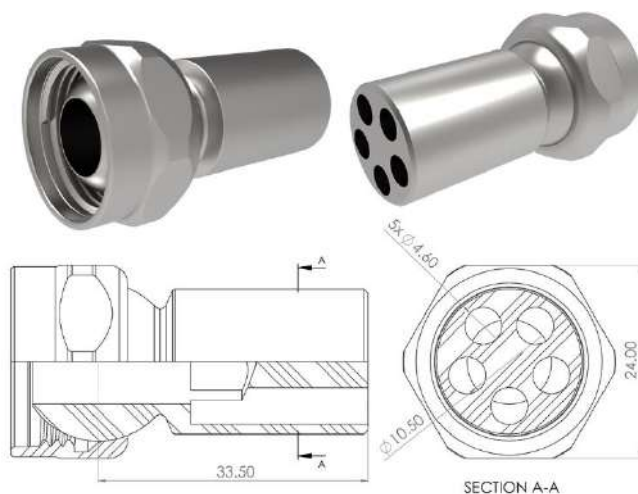
Material: Steel

| Ref. | Description |
|-------------|--|
| ME-NZ-01-00 | Straight nozzle ID:10.5 mm & L:27 mm |
| ME-NZ-01-01 | Straight nozzle ID:7 mm & L:27 |
| ME-NZ-01-02 | Straight coaxial nozzle ID:6 mm x 3 & L:34 |
| ME-NZ-01-03 | Straight coaxial nozzle ID:4.6 mm x 5 & L:34 |
| ME-NZ-01-04 | Straight nozzle ID:6 mm x2 & L:34 mm |
| ME-NZ-02-00 | Nozzle 45° ID:10.5 mm & L:50 mm |
| ME-NZ-02-01 | Nozzle 45° simple ID:10.5 mm & L:34 mm |
| ME-NZ-03-00 | Nozzle 90° ID:10.5 mm & L:34 mm |
| ME-NZ-03-01 | Nozzle 5 outlets at 90° ID:4.5 mm & L:49 mm |
| ME-NZ-03-02 | Nozzle 90° simple ID:10.5 mm & L:34 mm |
| ME-NZ-04-00 | Modular nozzle body W:68 mm & H:18 mm. Must be mounted with ME-NZ-04-01 or ME-NA-04-02 |
| ME-NZ-04-01 | Modular nozzle outlet 0° slot W:60 mm & H:2 mm. Must be mounted with ME-NZ-04-00 |
| ME-NZ-04-02 | Modular nozzle outlet 0° multibore DI:3 mm x 13. Must be mounted with ME-NZ-04-00 |

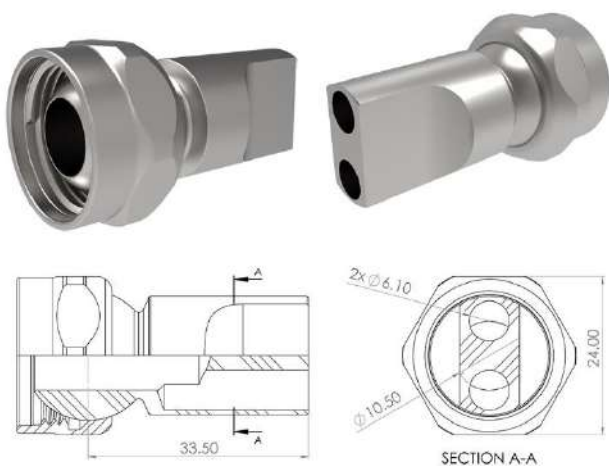




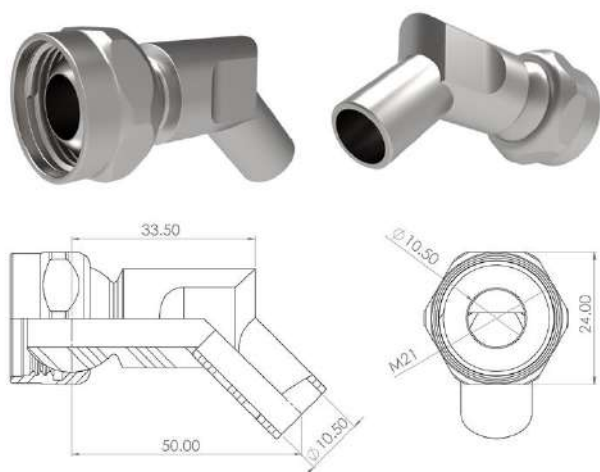
ME-NZ-01-02



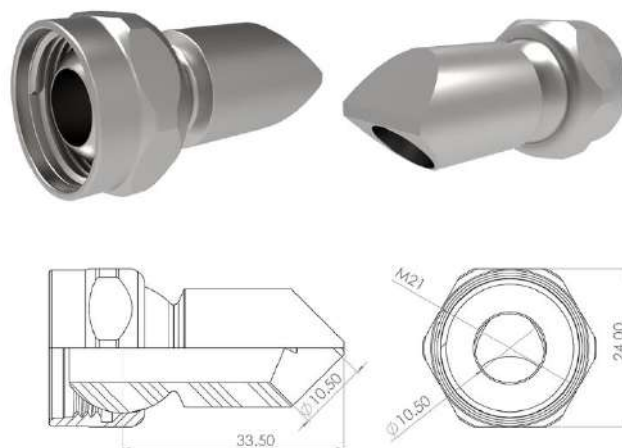
ME-NZ-01-03



ME-NZ-01-04



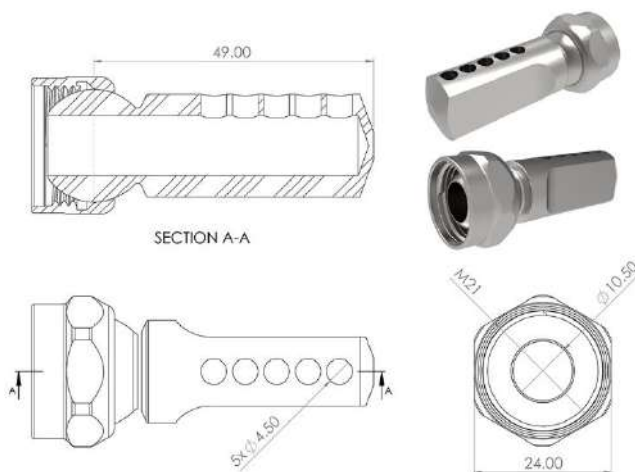
ME-NZ-02-00



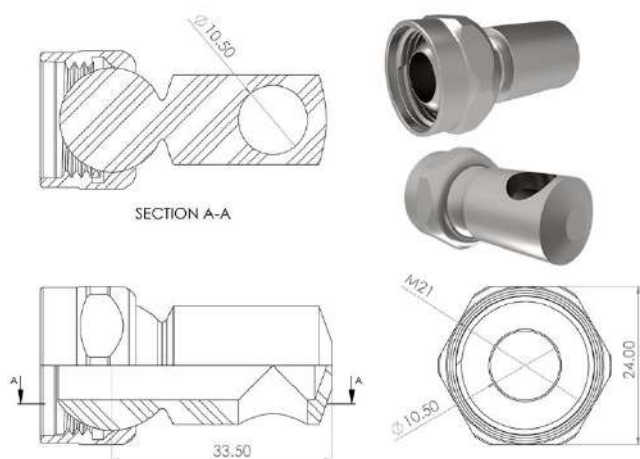
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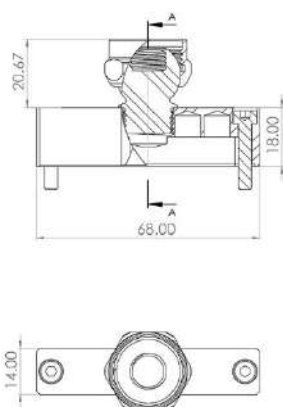
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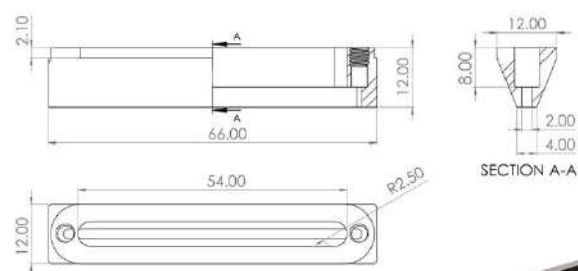
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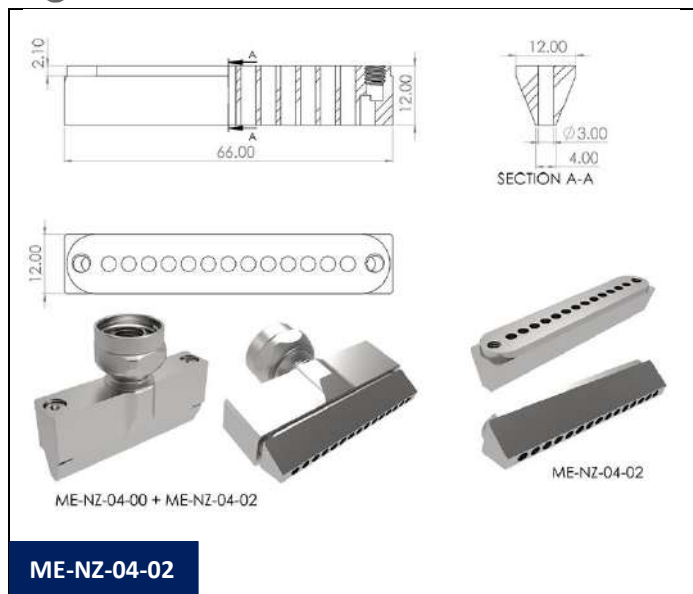
ME-NZ-03-02



ME-NZ-04-00



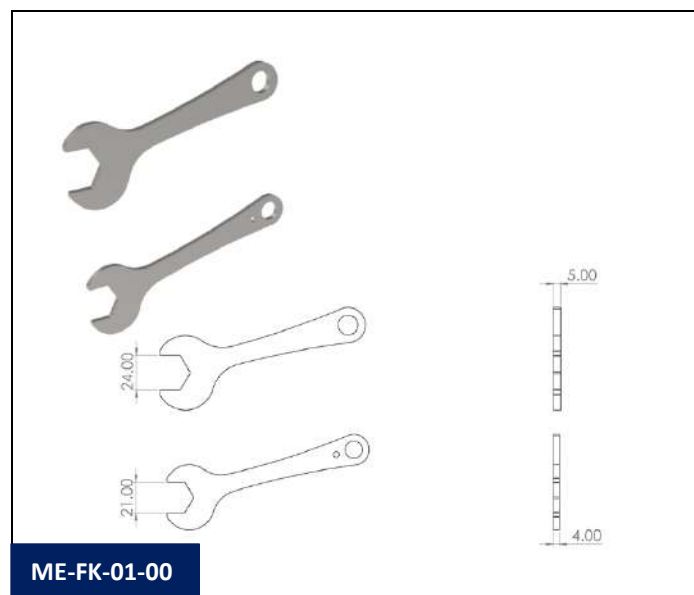
ME-NZ-04-01



Fastening keys for the articulated system:

Special fastening wrenches for fastening the MEGA articulated system.

| Ref. | Description |
|-------------|--|
| ME-FK-01-00 | Wrenches for fastening the 2 hexagons used in the MEGA program. SW21 & SW24. |

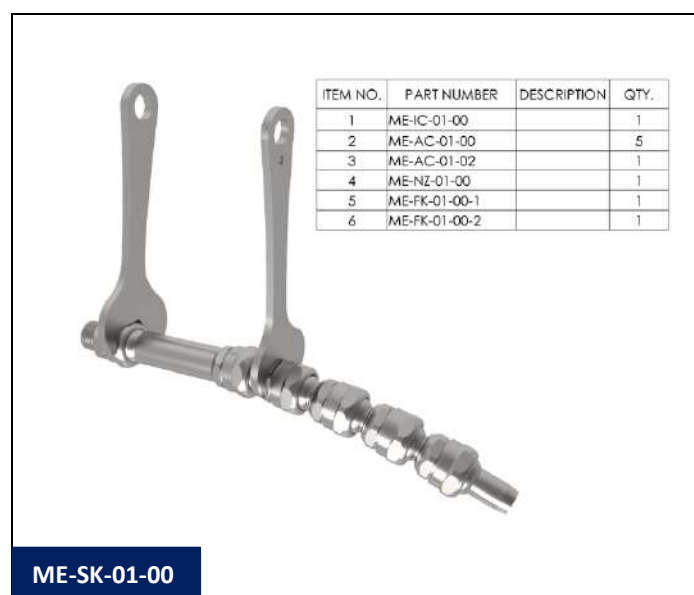


Starter kit:

Set of components to start and become familiar with the SCS Articulated Coolant Distribution System MEGA program. Basic set of components delivered in a basic kit for the most typical applications.

Weight: 440 g.

| Ref. | Description |
|-------------|---|
| ME-SK-01-00 | <p>Kit Single Outlet MEGA: For general cooling with a single outlet L=260 mm. Weight: 440 g.</p> <p>Initial Connection: 1 unit ME-IC-01-00 BSP 3/8”(M) to articulated connection MEGA.</p> <p>Articulated connection: 5 units ME-AC-01-00 Articulated connection MEGA L:28.5 mm 1 unit ME-AC-01-01 Articulated connection MEGA L:78.5 mm</p> <p>Coolant nozzles: 1 unit ME-NZ-01-00 Straight nozzle. ID:10.5 mm & L:27 mm</p> <p>Fastening keys for the articulated system: 1 unit ME-FK-01-00 Wrenches for fastening the 2 hexagons used in the MEGA program. SW21 & SW24.</p> |



GIGA (16 mm) PROGRAM

The internal through hole of the GIGA program is 16 mm and is ideal for the distribution of air and refrigerant (oil or emulsion) in medium and large-sized machines such as CNC lathes, machining centers or grinding machines.

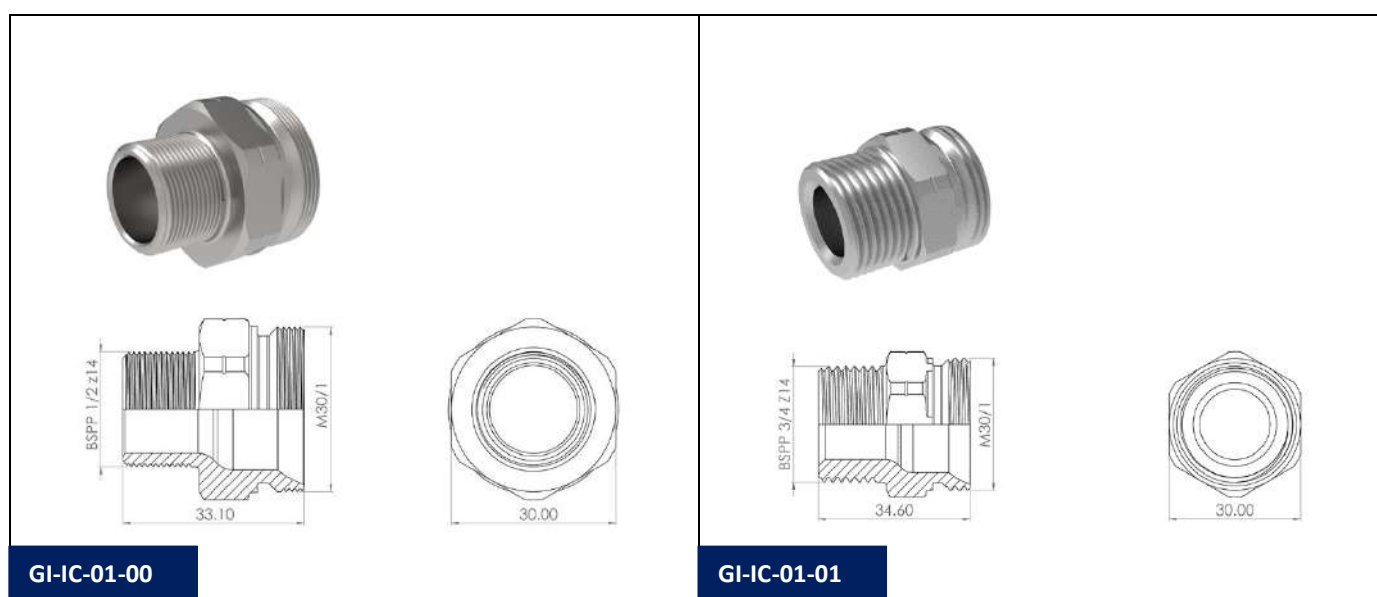
Maximum pressure: 80 Bar (1,160 psi)

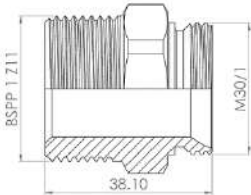
Initial connection:

Connection elements with the machine-tool or other SCS coolant distribution programs. ID:16 mm.

Material: Steel

| Ref. | Description |
|-------------|---|
| GI-IC-01-00 | BSP 1/2"(M) to articulated connection GIGA. |
| GI-IC-01-01 | BSP 3/4"(M) to articulated connection GIGA. |
| GI-IC-01-02 | BSP 1"(M) to articulated connection GIGA. |
| GI-IC-01-03 | NPT 1/2"(M) to articulated connection GIGA. |
| GI-IC-01-04 | NPT 3/4"(M) to articulated connection GIGA. |
| GI-IC-01-05 | NPT 1"(M) to articulated connection GIGA. |





Drawing not available

GI-IC-01-02

GI-IC-01-03

Drawing not available

Drawing not available

GI-IC-01-04

GI-IC-01-05

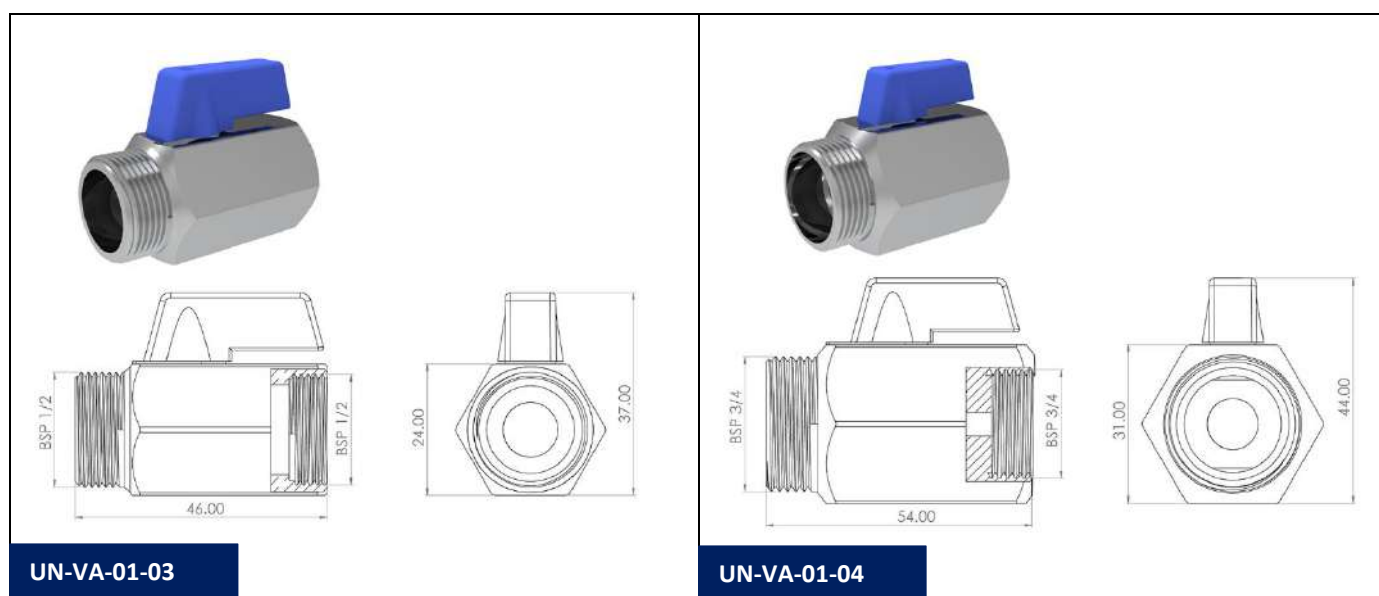
Ball valves:

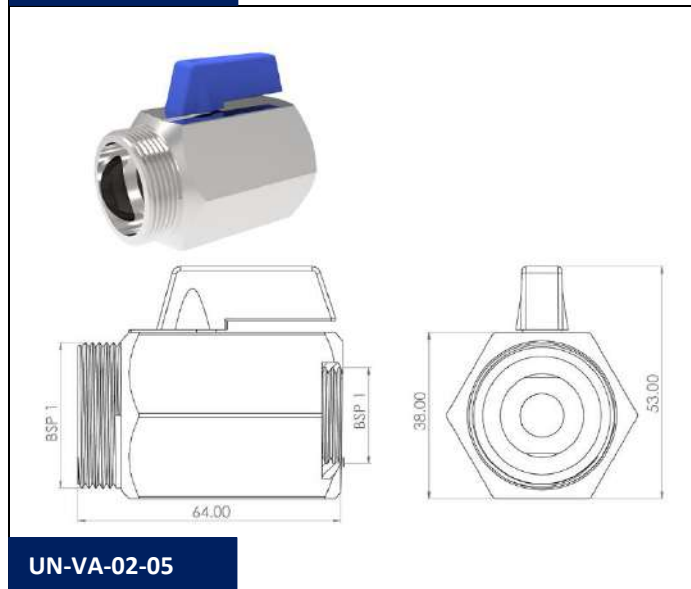
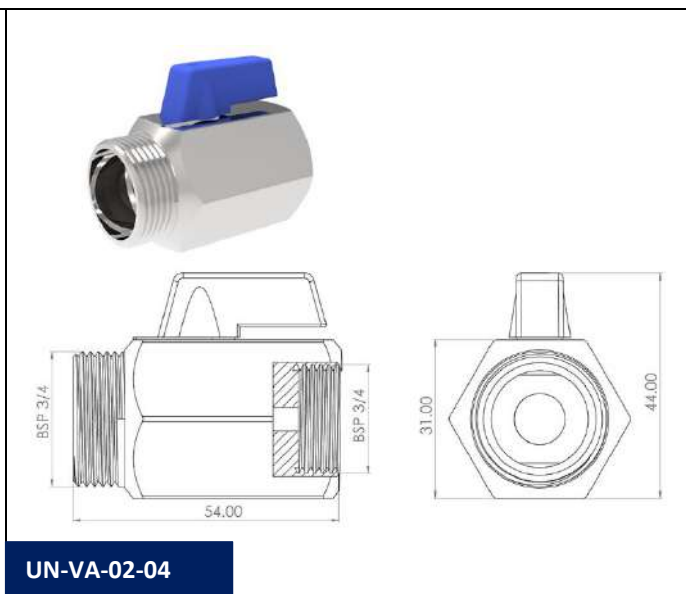
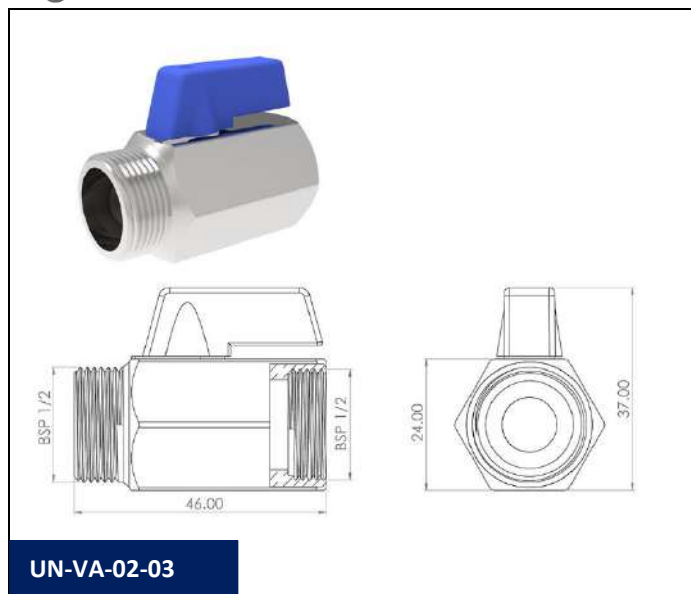
Miniature ball valves for shut-off or control of the coolant flow. To be installed at the machine-tool coolant outlet.

Types:

- PN10: Pressure 10 bar (145 psi). Material: Chrome plated brass.
- PN63: Pressure 63 bar (914 psi). Material: Stainless steel AISI-316

| Ref. | Description |
|-------------|---|
| UN-VA-01-03 | Closing valve PN10, BSP1/2"(M) and BPS1/2"(F) chromed-plated brass. |
| UN-VA-01-04 | Closing valve PN10, BSP3/4"(M) and BPS3/4"(F) chromed-plated brass. |
| UN-VA-02-03 | Closing valve PN63, BSP1/2"(M) and BPS1/2"(F) AISI-316 |
| UN-VA-02-04 | Closing valve PN63, BSP3/4"(M) and BPS3/4"(F) AISI-316 |
| UN-VA-02-05 | Closing valve PN63, BSP1"(M) and BPS1"(F) AISI-316 |



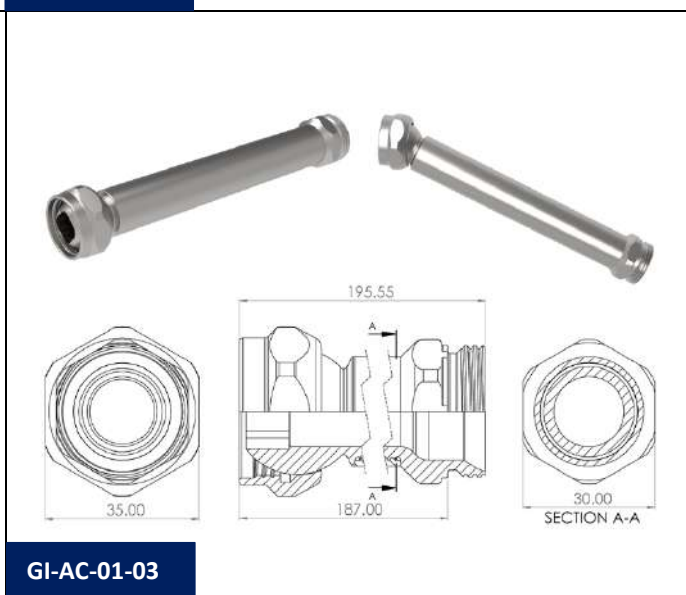


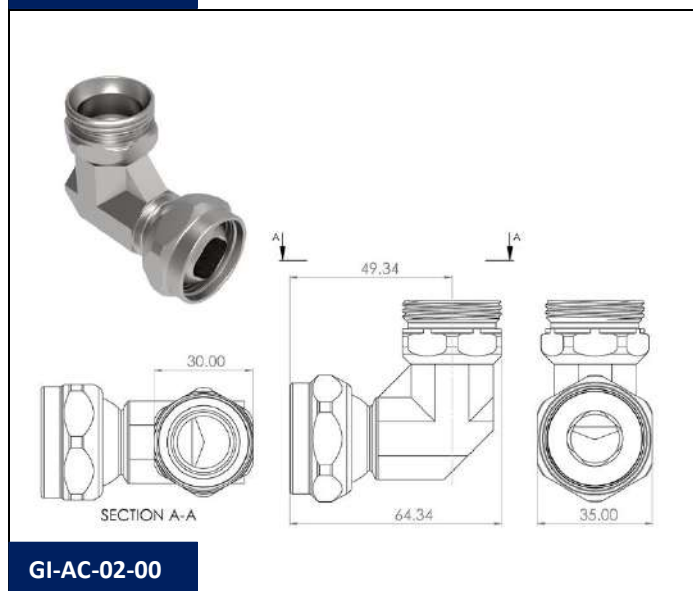
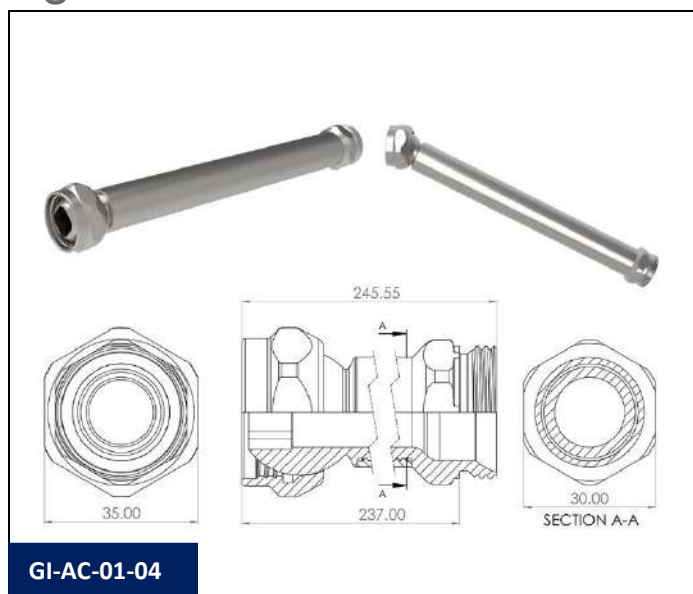
Articulated connection:

Basic articulated elements which connect to each other. Swiveling $\pm 25^\circ$. ID:16 mm.

Material: Steel

| Ref. | Description |
|-------------|--------------------------------------|
| GI-AC-01-00 | Articulated connection GIGA L:37 mm |
| GI-AC-01-01 | Articulated connection GIGA L:87 mm |
| GI-AC-01-02 | Articulated connection GIGA L:137 mm |
| GI-AC-01-03 | Articulated connection GIGA L:187 mm |
| GI-AC-01-04 | Articulated connection GIGA L:237 mm |
| GI-AC-02-00 | Articulated connection to 90° GIGA |





Distributors and adaptors:

Coolant distribution components, expansion of articulated lines and adaption to other SCS coolant distribution systems.

Material: Steel

| Ref. | Description |
|-------------|--|
| GI-DA-01-00 | "Y" distributor to articulated connection GIGA |

Drawing not available

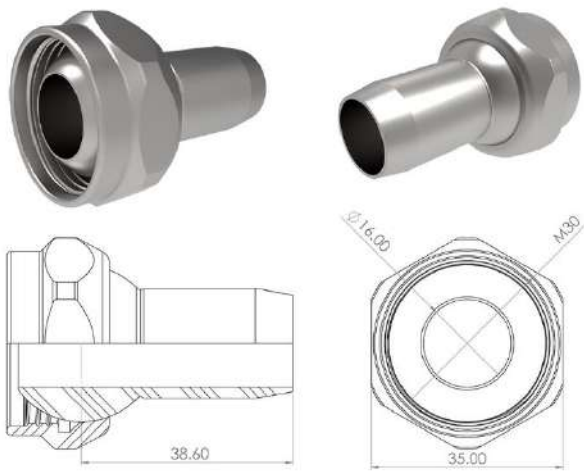
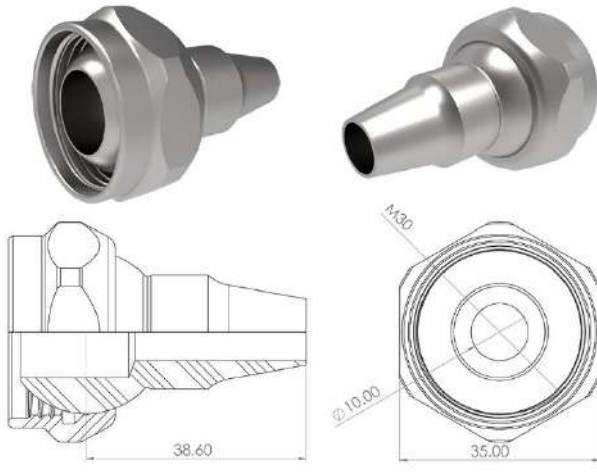
GI-DA-01-00

Coolant nozzles:

Nozzles with several designs adapted to meet different coolant delivery requirements.

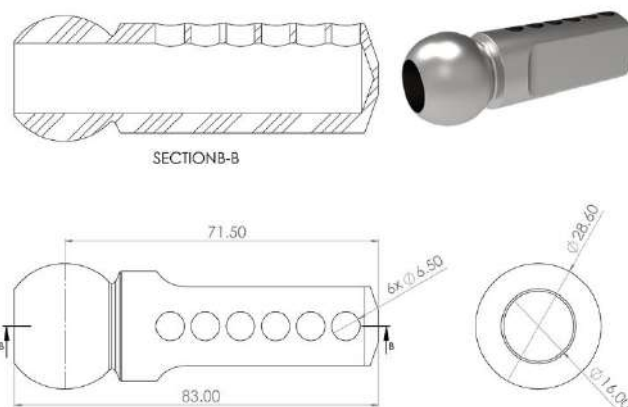
Material: Steel

| Ref. | Description |
|-------------|--|
| GI-NZ-01-00 | Straight nozzle. ID:16 mm & L:38.5 mm |
| GI-NZ-01-01 | Straight nozzle. ID:10 mm & L:38.5 |
| GI-NZ-02-00 | Nozzle 45°. ID:16 mm & L:38.5 mm |
| GI-NZ-03-00 | Nozzle 90°. ID:16 mm & L:38.5 mm |
| GI-NZ-03-01 | Nozzle 6 outlets at 90°. ID:6.5 mm & L:78 mm |

| | |
|--|---|
|  <p>GI-NZ-01-00</p> |  <p>GI-NZ-01-01</p> |
| <p><i>Drawing not available</i></p> <p>GI-NZ-02-00</p> | |

Drawing not available

GI-NZ-03-00

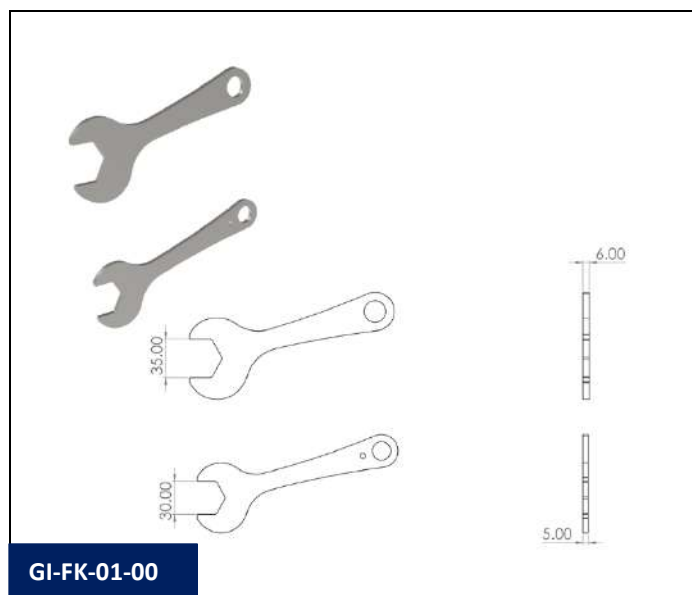


GI-NZ-03-01

Fastening keys for the articulated system:

Special fastening wrenches for fastening the GIGA articulated system.

| Ref. | Description |
|-------------|--|
| GI-FK-01-00 | Wrenches for fastening the 2 hexagons used in the GIGA program. SW30 & SW35. |



Starter kit:

Set of components to start and become familiar with the SCS Articulated Coolant Distribution System GIGA program. Basic set of components delivered in a basic kit for the most typical applications.

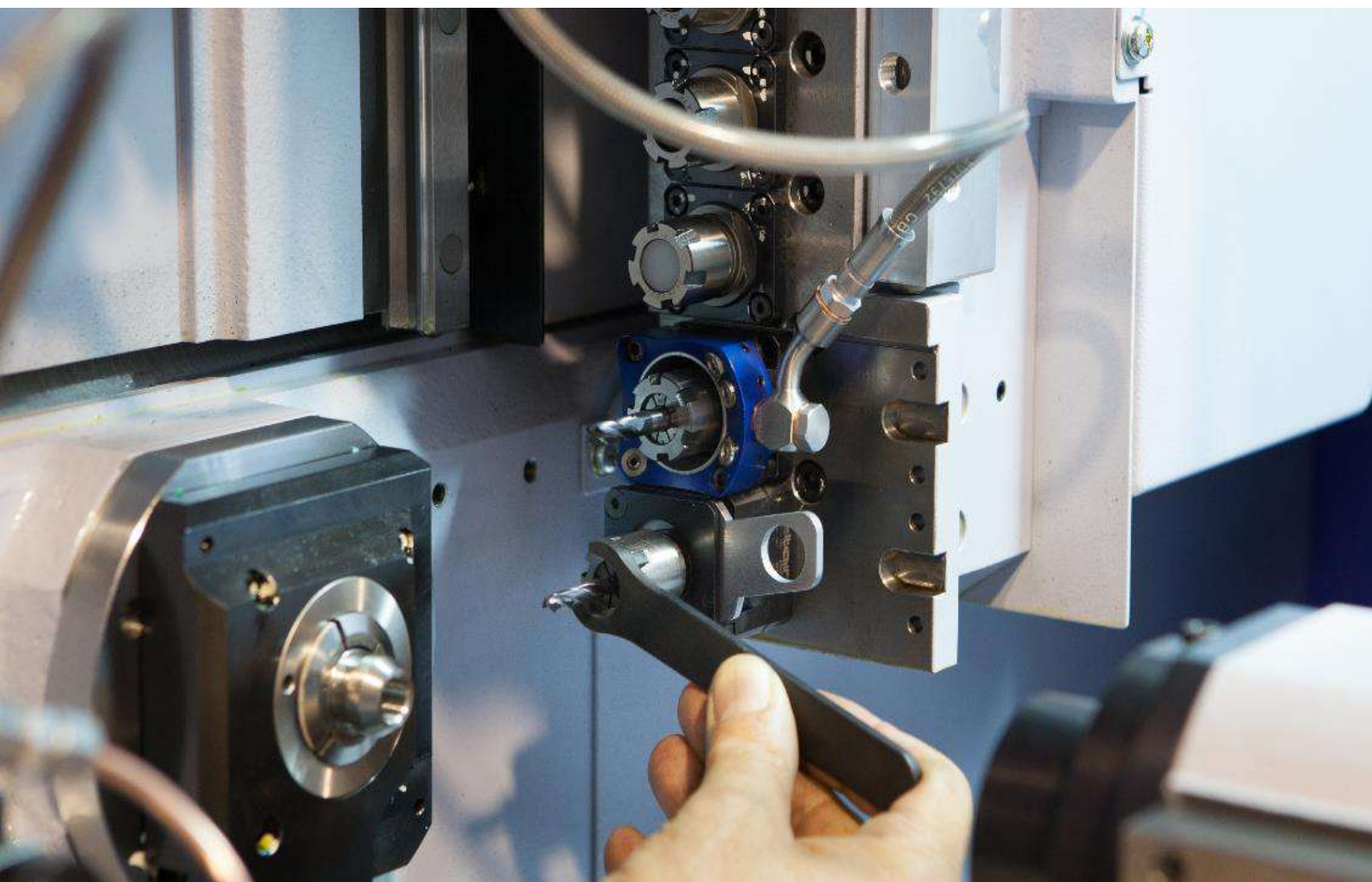
Weight: 1,160 g.

| Ref. | Description |
|-------------|--|
| GI-SK-01-00 | <p>Kit Single Outlet GIGA: For general cooling with a single outlet L=330 mm. Weight: 1160 g.</p> <p>Initial Connection: 1 unit GI-IC-01-00 BSP 1/2"(M) to articulated connection GIGA.</p> <p>Articulated connection: 5 units GI-AC-01-00 Articulated connection GIGA L:37 mm 1 unit GI-AC-01-01 Articulated connection GIGA L:87 mm</p> <p>Coolant nozzles: 1 unit GI-NZ-01-00 Straight nozzle. ID:16 mm & L:38.5 mm</p> <p>Fastening keys for the articulated system: 1 unit GI-FK-01-00 Wrenches for fastening the 2 hexagons used in the GIGA program. SW30 & SW35.</p> |



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3. ACCESORIES FOR SAFETY AND PRODUCTIVITY IMPROVEMENT

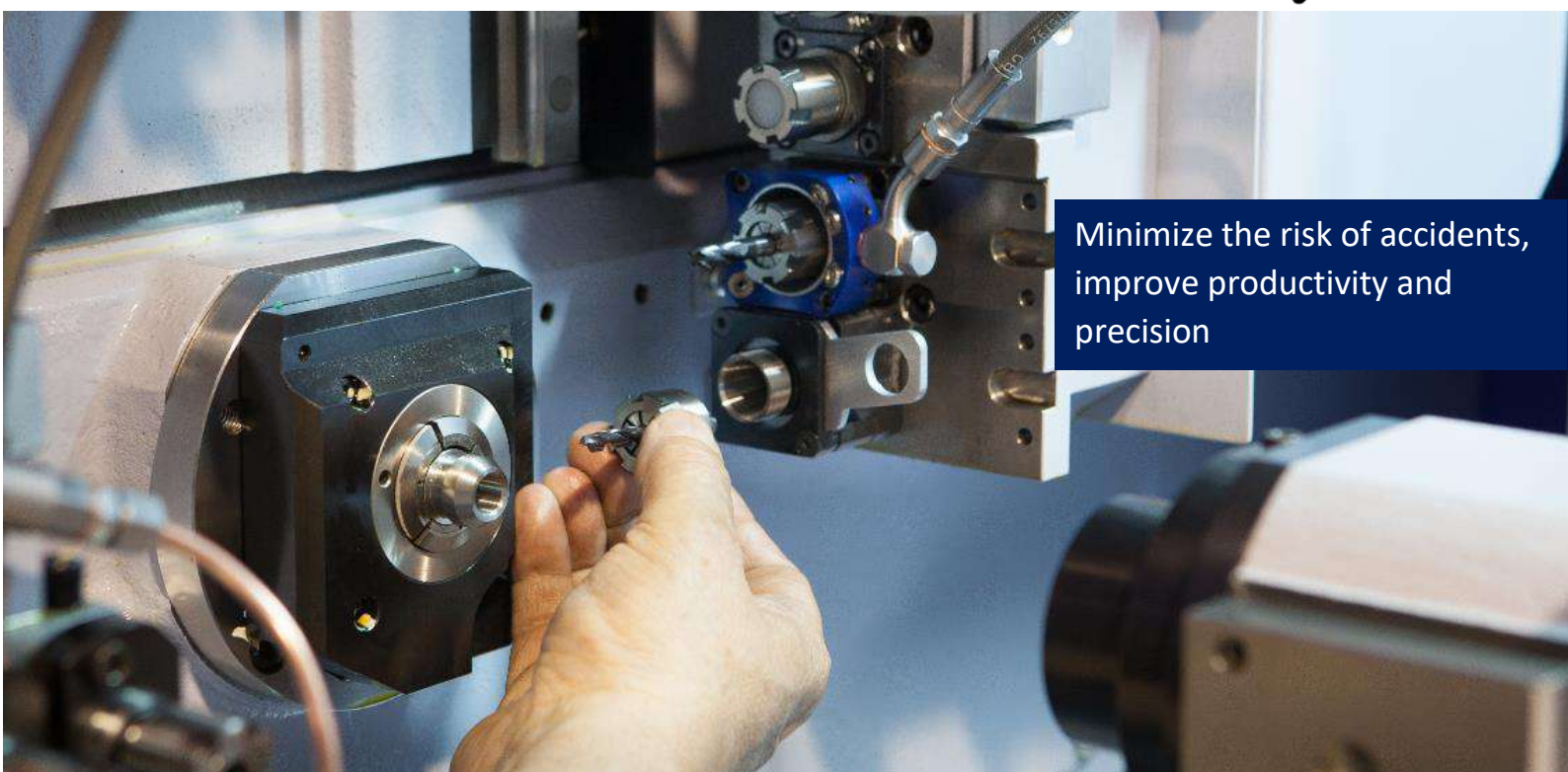


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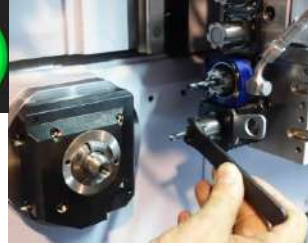
ACCESSORIES FOR SAFETY AND PRODUCTIVITY IMPROVEMENT IN THE PREPARATION AND OPERATION OF CNC LATHES

Protective covers for tool holders ER-collets, locking systems for safe tool change in driven tool holders, coolant distribution rings for fixed and driven tool holders.

A set of different components that help improve productivity in the CNC lathe operation and safety while performing a tool change or machine set-up.



Locking systems for safe tool change in driven tool holders*.



The traditional system for tool change in driven tool holders is not safe.



Manual tool change is not safe, and it is easy that the operator suffers from small cuts to severe injuries.

- ✗ Both hands needed to unlock the collet nut of the driven tool.
- ✗ Uncomfortable position of the operator, often unable to maintain stability and hold, having to literally enter the machine.
- ✗ High risk of cutting with the edge of tools mounted on other blocks of the machine.
- ✗ Possibility of severe injuries in case one of the unlocking keys disengages and the operator loses balance.

*Patent pending

The SCS Safe Tool Change system minimizes the risk of injury and greatly reduces tool change time.

- ✓ By inserting a locking key into the slot of the tool changing device the driven tool holder becomes blocked.
- ✓ Only one hand is needed to unlock the collet nut.
- ✓ The operator can be in a much more comfortable position and use the hand that is free to hold himself in position, have better stability and therefore avoid losing balance.
- ✓ The Safe Tool Change device remains installed in the machine without altering its operation and serves as the basis for the SCS refrigerant distribution systems.



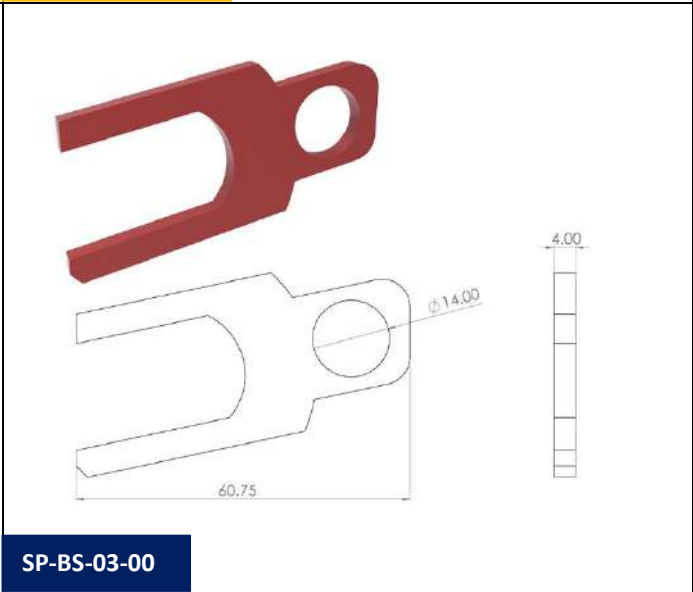
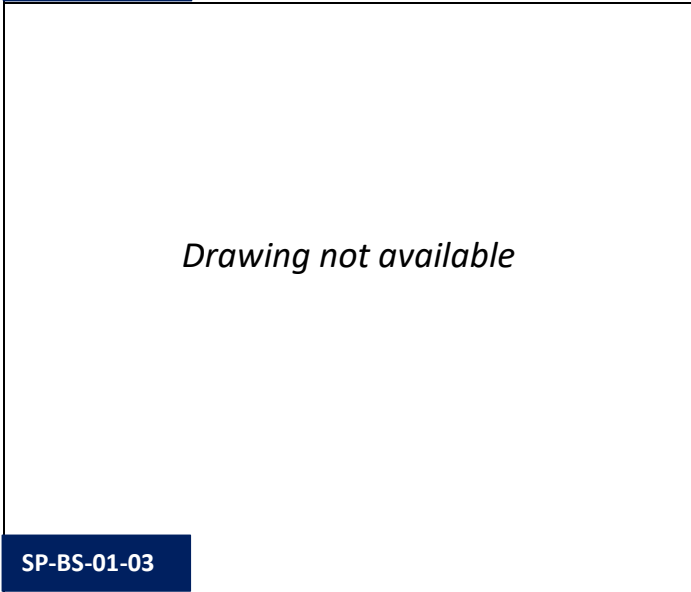
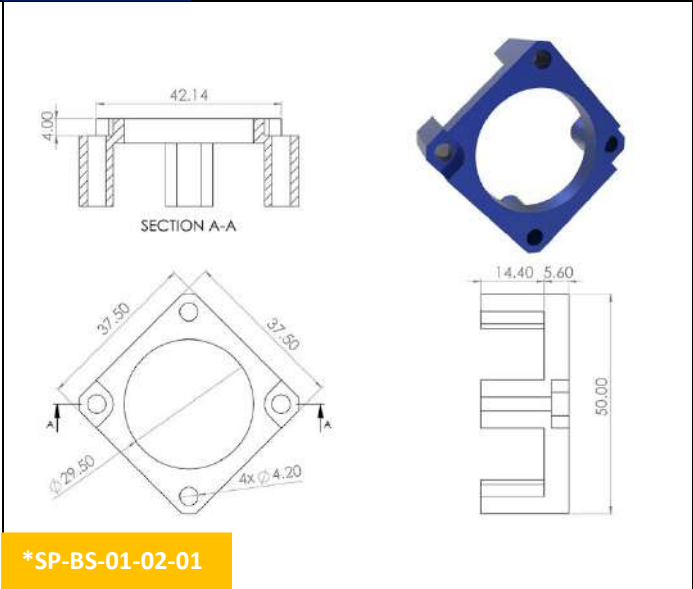
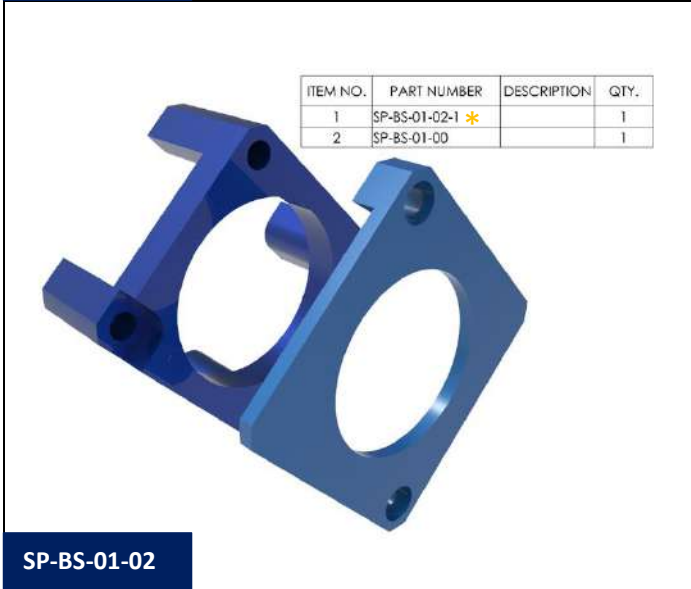
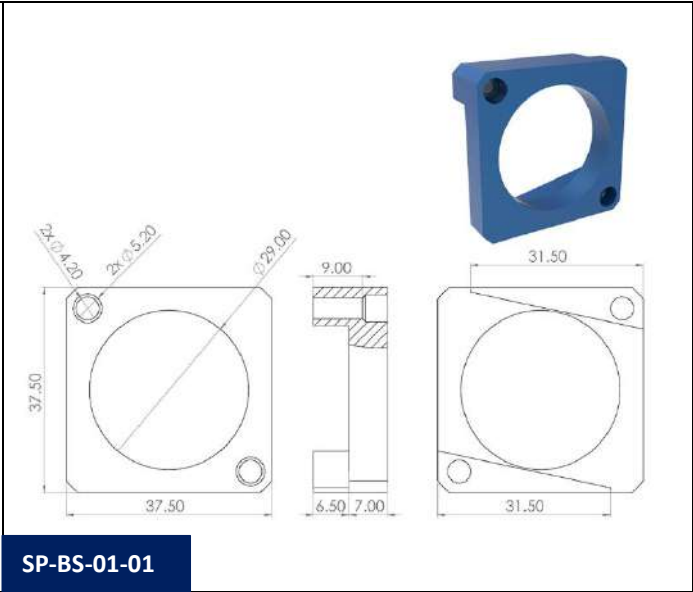
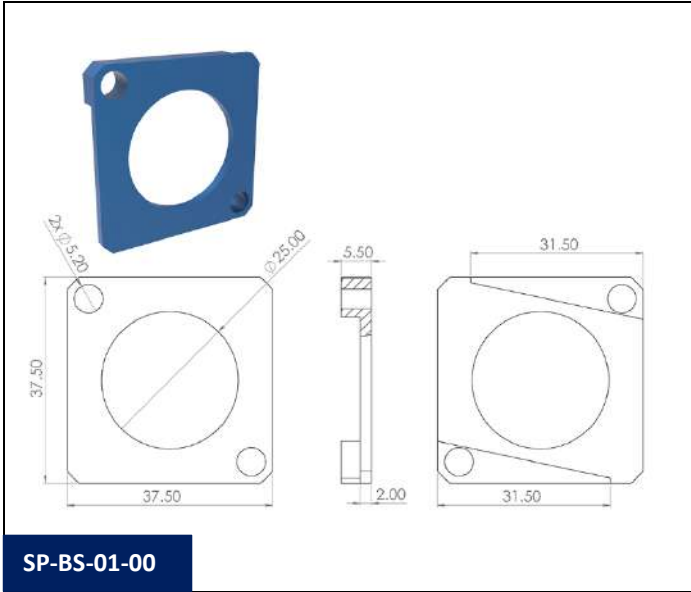
Blocking systems for safe tool change in driven tool holders for CNC lathes:

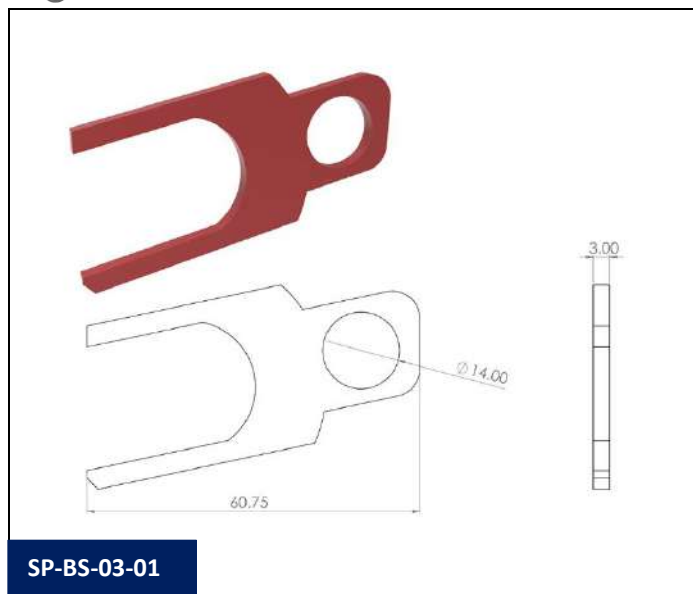
Improves drastically the safety of machine-tool operators and avoids potential injuries in the tool change or adjustment of tools in rotary tool holders (collet type).

Material: Steel

| Ref. | Description |
|-------------|---|
| SP-BS-01-00 | Blocking system for mounting in radial rotary tool holder ref. 331-50-00 with ER-16 collet in STAR lathes: ECAS-12/20, SB-12/20R, SR-20J/JN/SR-20RIII, SR-20RII, SR-20RIV, SR-32J/JN, SR-32JII-A, SR-32JII-B, SV-12, SV-20, SV-32, SV-32JII, SV-38R, SW-20. Does not include locking key ER-16 ref. SP-BS-03-00. |
| SP-BS-01-01 | Blocking system for mounting in radial rotary tool holder ref. 7.072.950 with ER-20 collet in STAR lathes: SR-20J/JN/SR-20RIII, SR-20RII, SR-20RIV, SR-32J/JN, SR-32JII-A, SR-32JII-B, SV-12, SV-20, SV-32, SV-32JII, SW-20. Does not include locking key ER-20 ref. SP-BS-03-01. |
| SP-BS-01-02 | Blocking system for mounting in radial rotary tool holder ref. 571-55-00 or ref. 7.073.789 with ER-16 collet in STAR lathes: ECAS-12/20, ECAS-32T, SB-12/20R, SR-20J/JN/SR-20RIII, SR-20RII, SR-20RIV, SV-38R, SW-20. Does not include locking key ER-16 ref. SP-BS-03-00. |
| SP-BS-01-03 | Blocking system for mounting in back side tool holders ref. 0R1-61 with ER-16 collet in STAR lathes: SB-12/20R, SR-32JII-A, SR-32JII-B, SR-38 (Type A/B), SV-20R, SW-12RII, SW-20. Does not include locking key ER-16 ref. SP-BS-03-00. |
| SP-BS-03-00 | Blocking key for ER-16 collet |
| SP-BS-03-01 | Blocking key for ER-20 collet |







SP-BS-03-01

Coolant distribution rings for fixed and driven tool holders in CNC lathes:

The coolant flow can be easily and efficiently oriented towards the cutting edge of the tools mounted in the driven tool holders.

To be assembled on top of the Blocking system for safe tool change ref. SP-BS-01-XX or independently.

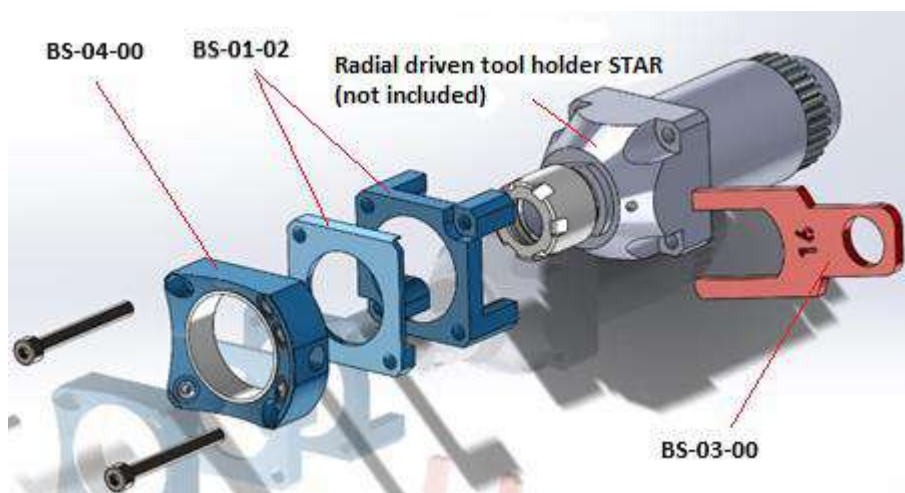
Material: Steel

| Ref. | Description |
|-------------|---|
| SP-BS-04-00 | Coolant distribution ring with inlet M8x1(F) and 3 orientable ball-type nozzle outlets with ID:1 mm. To be mounted in STAR lathes: 1. Radial driven tool holder ref. 331-50-00 with ER-16 collet. 2. Radial driven tool holder ref. 571-55-00 or ref. 7.073.789 with ER-16 collet. Requires Blocking system ref. SP-BS-01-02 as a base for assembly. |
| SP-BS-04-01 | Coolant distribution ring with inlet M8x1(F) and 3 orientable ball-type nozzle outlets with ID:1 mm. To be mounted in STAR lathes: Radial driven tool holder ref. 7.072.950 with ER-20 collet. |
| SP-BS-04-02 | Coolant distribution ring with inlet M8x1(F) and 3 orientable ball-type nozzle outlets with ID:1 mm. To be mounted in STAR lathes: Back post driven tool holder ref. 0R1-61 with ER-16 collet. |



EXAMPLE OF ASSEMBLY:

Blocking systems for safe tool change and coolant distribution ring for driven tool holders.



SP-BS-04-00: Coolant distribution ring with inlet M8x1(F) and 3 orientable ball-type nozzle outlets

SP-BS-01-02: Blocking system for radial driven tool holder ref. 571-55-00 or ref. 7.073.789 with ER-16
Collet for STAR lathe

SP-BS-03-00: Blocking key for ER-16 collet

Protective covers for ER-collet tool holders:

Protects against undesired coolant, chips or dirt ingress into driven or fixed tool holders with ER-collet clamping system, especially when mounted in the machine and not in use.

Material: White polyamide.

| Ref. | Description |
|-------------|---|
| SP-PC-01-00 | Protective cover for tool holder with collet type ER-11 |
| SP-PC-01-01 | Protective cover for tool holder with collet type ER-16 |
| SP-PC-01-02 | Protective cover for tool holder with collet type ER-20 |
| SP-PC-01-03 | Protective cover for tool holder with collet type ER-25 |
| SP-PC-01-04 | Protective cover for tool holder with collet type ER-32 |
| SP-PC-01-05 | Protective cover for tool holder with collet type ER-40 |
| SP-PC-01-06 | Protective cover for tool holder with collet type ER-8 |



Protects against undesired coolant, chips or dirt ingress into driven or fixed tool holders with ER-collet clamping system, especially when mounted in the machine and not in use.

Material: Red anodized aluminum.

| Ref. | Description |
|---------------|---|
| SP-PC-03-00-0 | Protective cover for tool holder with collet type ER-11 |
| SP-PC-03-01-0 | Protective cover for tool holder with collet type ER-16 |
| SP-PC-03-02-0 | Protective cover for tool holder with collet type ER-20 |
| SP-PC-03-03-0 | Protective cover for tool holder with collet type ER-25 |
| SP-PC-03-04-0 | Protective cover for tool holder with collet type ER-32 |
| SP-PC-03-05-0 | Protective cover for tool holder with collet type ER-40 |
| SP-PC-03-06-0 | Protective cover for tool holder with collet type ER-8 |

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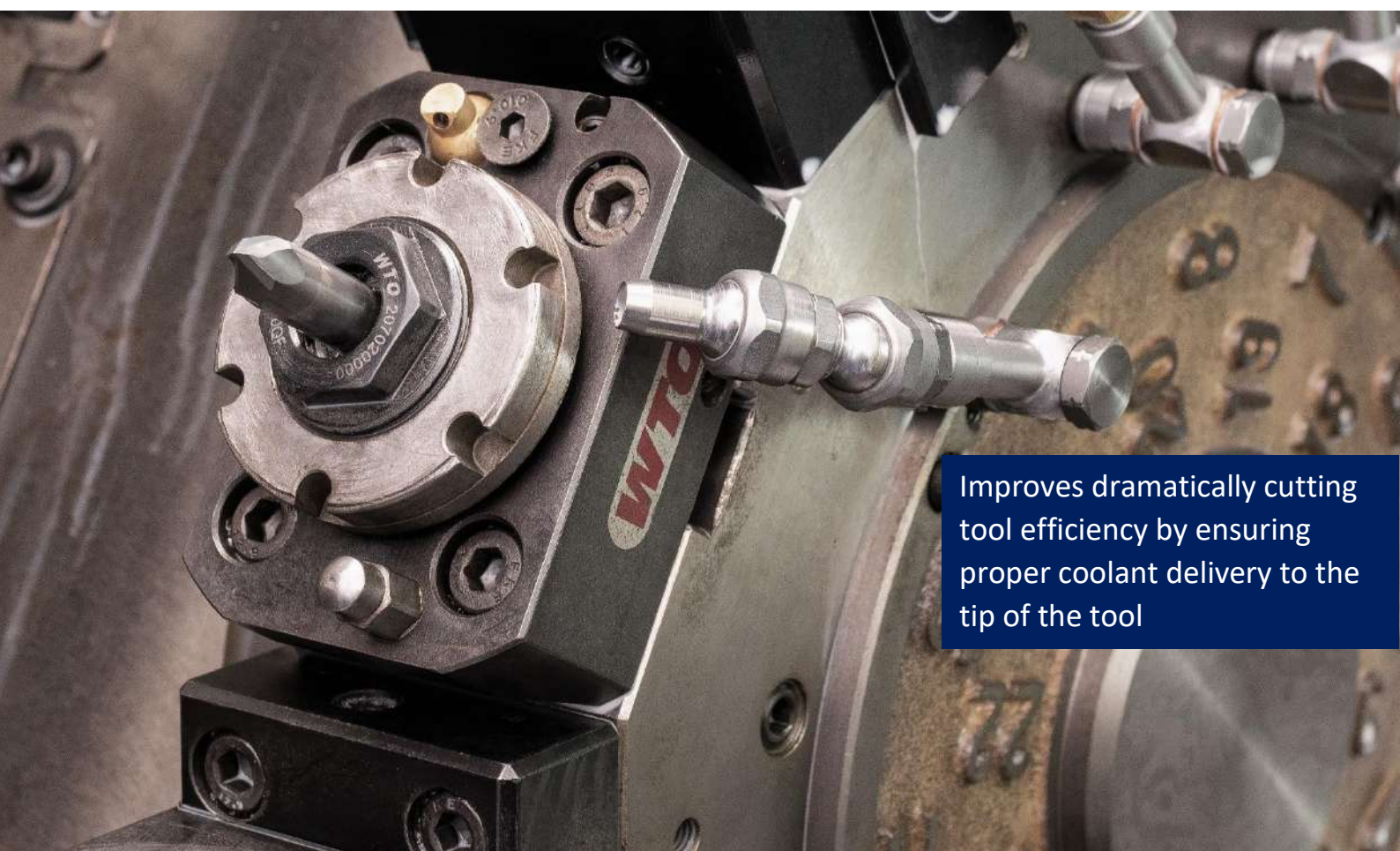
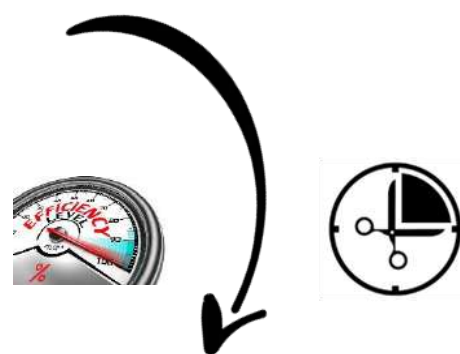
4. MACHINE KITS. COMPLETE PRE-
ASSEMBLED PARTS READY TO INSTALL IN
MACHINES OR TOOL HOLDERS



MACHINE KITS. PRE-ASSEMBLED PARTS READY TO INSTALL IN MACHINES OR TOOL HOLDERS IMPROVING REALIABILITY AND EFFICIENCY OF COOLANT DELIVERY

Complete sets of articulated steel tubes to substitute traditional plastic tubes installed in the machine which cannot withstand coolant pressure. Pre-defined kits for top selling machines and possibility of customized solutions with basic information and a photograph of existing plastic tubing to substitute.

Kits for turret disc mounting to improve cooling to the tool holders and kits for tool holders, both driven and fixed with ball type adaptors and complete range of nozzles. No need for copper tubes with inconsistent bending and non-existing nozzle.



Improves dramatically cutting tool efficiency by ensuring proper coolant delivery to the tip of the tool

Example: STAR SV-12/20/32 Series – Kit of articulated steel tubes



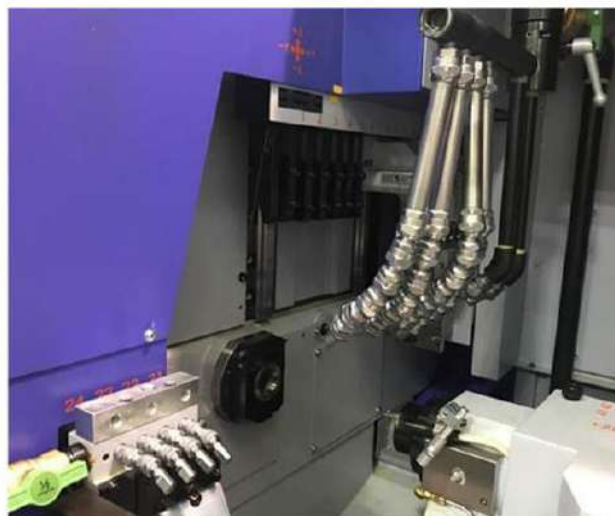
| ITEM NO. | PART NUMBER | DESCRIPTION | QTY. | |
|----------|-------------|---------------------------------------|------|-----------------------------------|
| 1 | ME-IC-01-04 | General cooling – Main and Subspindle | 10x1 | <div><div></div><div></div></div> |
| 2 | ME-AC-01-00 | General cooling – Main and Subspindle | 10x6 | <div><div></div><div></div></div> |
| 3 | ME-AC-01-01 | General cooling – Main and Subspindle | 10x1 | <div><div></div><div></div></div> |
| 4 | ME-NZ-01-00 | General cooling – Main and Subspindle | 6x1 | <div><div></div><div></div></div> |
| 5 | ME-NZ-01-01 | General cooling – Main and Subspindle | 4x1 | <div><div></div><div></div></div> |
| 6 | ME-FK-01-00 | Fastening keys | 1x1 | |



BEFORE



AFTER



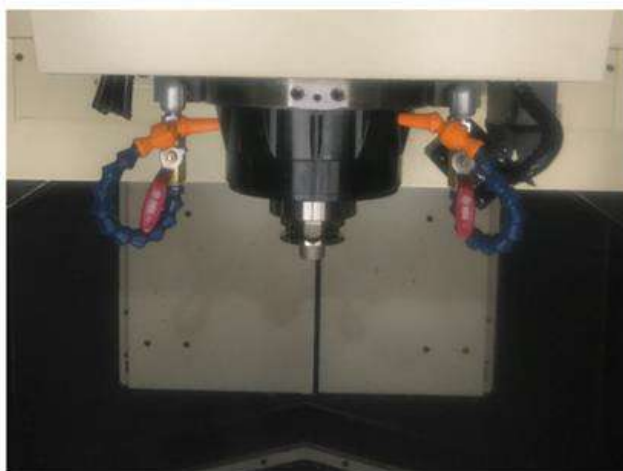
BEFORE



AFTER



BEFORE



AFTER



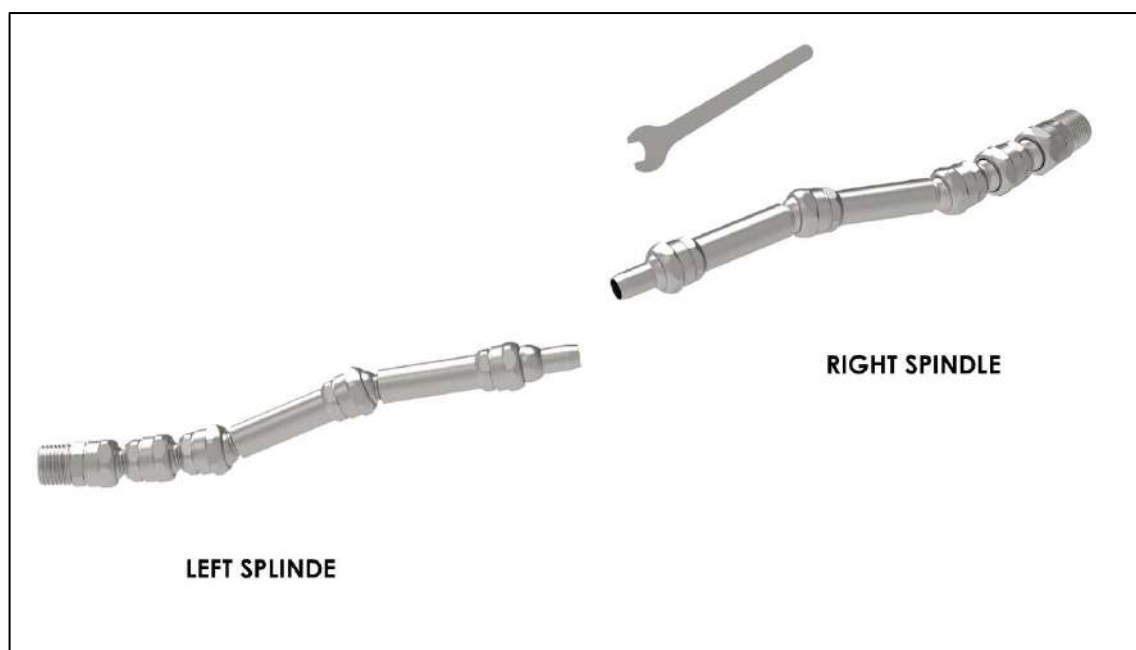
Kits for general cooling of machines:

To substitute plastic tubes with articulated steel tubes. Guarantees security in the positioning. Withholds the vibration and pressure of the coolant without losing position. Guarantees that the coolant will always be directed to the same point.

We can prepare kits for any machine, just send the pictures of existing plastic articulated tubes and connection thread to the machine and we will send a quotation.

NAKAMURA-TOME

| Ref. | Description |
|-------------|--|
| MK-NT-01-00 | Kit Single Outlet MEGA for main spindle for NAKAMURA lathes series AS-200, SC-100/150, WT-100/150 and WY-100/150. |
| MK-NT-01-01 | Kit Single Outlet MEGA for main and subspindle for NAKAMURA lathes series AS-200, SC-100/150, WT-100/150 and WY-100/150. |
| MK-NT-01-02 | Kit Single Outlet GIGA for main and subspindle for NAKAMURA lathes series WT-250/300 and WY-250. |

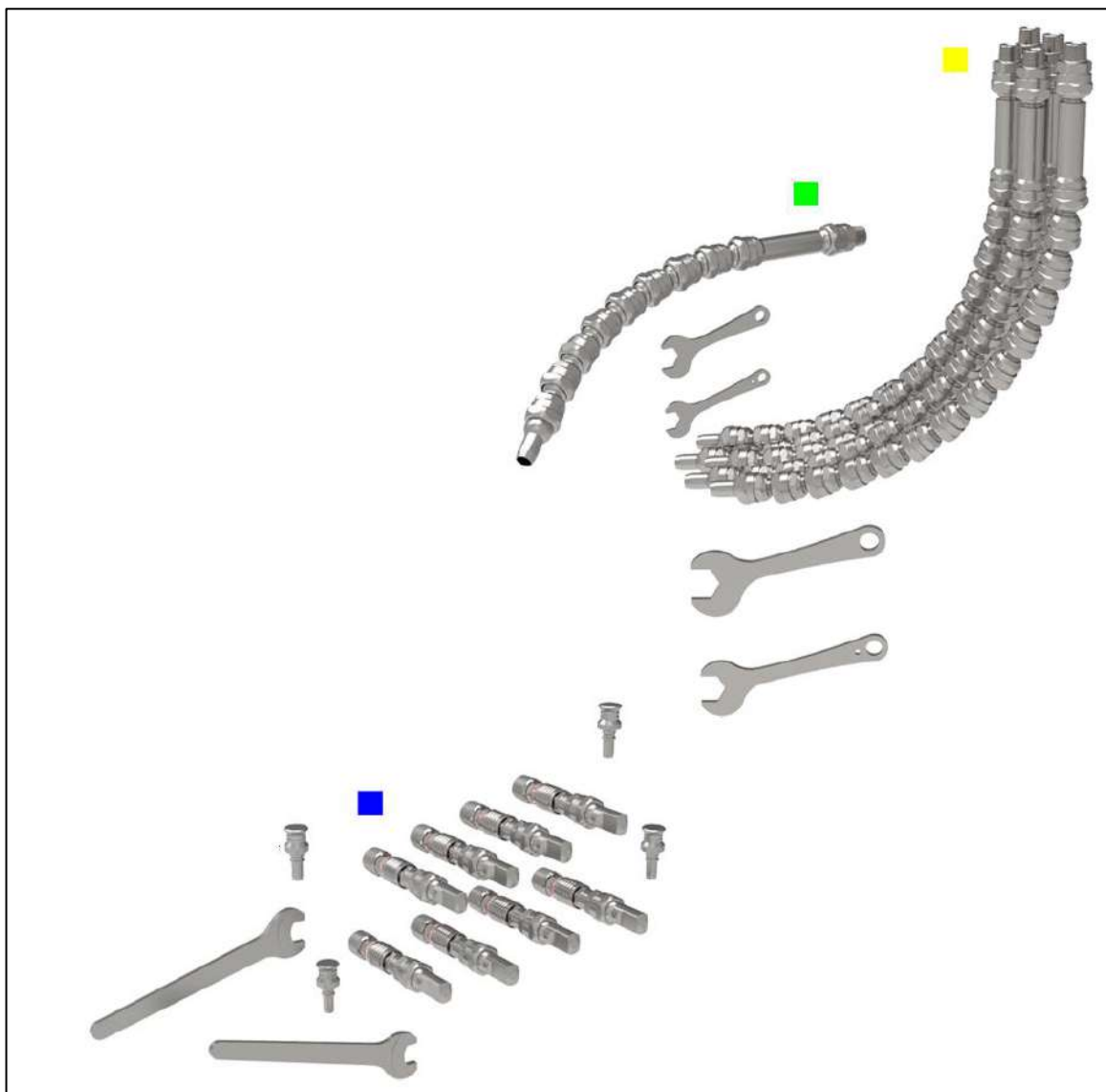


Example: MK-NT-01-01 - Kit of articulated steel tubes

STAR MICRONICS

| Ref. | Description |
|---------------|---|
| MK-SM-01-00 | Kit articulated steel tubes MEGA (6 tubes) +HECTO (4 tubes)for STAR SR-20J. General cooling and back tool post. |
| MK-SM-01-00-B | Kit articulated steel tubes MEGA (6 tubes) +HECTO (4 tubes) for STAR SR-20J. General cooling and back tool post articulated tubes with quick connection fittings. |
| MK-SM-01-01 | Kit articulated steel tubes MEGA (5 tubes) +HECTO (8 tubes) for STAR SR-20JII. General cooling and back tool post. |
| MK-SM-01-01-B | Kit articulated steel tubes MEGA (5 tubes) +HECTO (8 tubes) for STAR SR-20JII. General cooling and back tool post articulated tubes with quick connection fittings. |
| MK-SM-01-02 | Kit articulated steel tubes MEGA (6 tubes)+HECTO (8 tubes) for STAR SR-20R IV. General cooling and back tool post. |
| MK-SM-01-02-B | Kit articulated steel tubes MEGA (6 tubes)+HECTO (8 tubes) for STAR SR-20R IV. General cooling and back tool post articulated tubes with quick connection fittings. |
| MK-SM-01-03 | Kit articulated steel tubes MEGA (9 tubes)+HECTO (8 tubes) for STAR SR-38. General cooling and back tool post. |
| MK-SM-01-03-B | Kit articulated steel tubes MEGA (9 tubes)+HECTO (8 tubes) for STAR SR-38. General cooling and back tool post. |
| MK-SM-01-04 | Kit articulated steel tubes MEGA (5 tubes)+HECTO (4 tubes) for STAR SR-32J. General cooling and back tool post. |
| MK-SM-01-04-B | Kit articulated steel tubes MEGA (5 tubes)+HECTO (4 tubes) for STAR SR-32J. General cooling and back tool post articulated tubes with quick connection fittings. |
| MK-SM-01-05 | Kit articulated steel tubes MEGA (10 tubes) for STAR SV-12/20/32. General cooling for main and subspindle. |
| MK-SM-01-06 | Kit articulated steel tubes MEGA (6 tubes)+HECTO (8 tubes)for STAR SW-12RII. General cooling and back tool post. |
| MK-SM-01-06-B | Kit articulated steel tubes MEGA (6 tubes)+HECTO (8 tubes)for STAR SW-12RII. General cooling and back tool post articulated tubes with quick connection fittings. |
| MK-SM-01-07 | Kit articulated steel tubes MEGA (7 tubes) +HECTO (4 tubes) for STAR SW-20. General cooling and back tool post. |
| MK-SM-01-07-B | Kit articulated steel tubes MEGA (7 tubes) +HECTO (4 tubes) for STAR SW-20. General cooling and back tool post articulated tubes with quick connection fittings. |
| MK-SM-01-08 | Kit articulated steel tubes MEGA (10 tubes)+HECTO(8 tubes) for STAR SV-20R. General cooling and back tool post. |

| Ref. | Description |
|---------------|--|
| MK-SM-01-08-B | Kit articulated steel tubes MEGA (10 tubes)+HECTO(8 tubes) for STAR SV-20R. General cooling and back tool post articulated tubes with quick connection fittings. |
| MK-SM-01-09 | Kit articulated steel tubes MEGA (5 tubes)+HECTO (4 tubes) for STAR SB-20R. General cooling and back tool post. |
| MK-SM-01-10 | Kit articulated steel tubes MEGA (4 tubes)+HECTO (4 tubes) for STAR SR-10J. General cooling main and subspindle. |



Example: MK-SM-01-02-B - Kit of articulated steel tubes for STAR SR-20R IV with quick connectors fittings for the articulated steel tubes mounted in the back tool post.

CITIZEN

| Ref. | Description |
|-------------|---|
| MK-CI-01-00 | Kit articulated steel tubes HECTO (5 tubes) for CITIZEN R04 & R07. |
| MK-CI-01-01 | Kit articulated steel tubes HECTO (5 tubes)for CITIZEN B12/B16. |
| MK-CI-01-02 | Kit articulated steel tubes HECTO (9 tubes) for CITIZEN K12 & K16. |
| MK-CI-01-03 | Kit articulated steel tubes MEGA (9 tubes) for CITIZEN A20 VII. |
| MK-CI-01-04 | Kit articulated steel tubes HECTO (3 tubes)+MEGA (3 tubes) for CITIZEN A32. |
| MK-CI-01-05 | Kit articulated steel tubes HECTO (9 tubes) for CITIZEN L12. |
| MK-CI-01-06 | Kit articulated steel tubes HECTO (7 tubes) for CITIZEN L20. |
| MK-CI-01-07 | Kit articulated steel tubes HECTO (4 tubes)+MEGA (6 tubes) for CITIZEN L20 X. |
| MK-CI-01-08 | Kit articulated steel tubes HECTO (4 tubes)+MEGA (4 tubes) for CITIZEN L20 XII. |
| MK-CI-01-09 | Kit articulated steel tubes HECTO (1 tubes)+MEGA (11 tubes) for CITIZEN M16 VIII. |
| MK-CI-01-10 | Kit articulated steel tubes MEGA (13 tubes) for CITIZEN M32 V. |
| MK-CI-01-11 | Kit articulated steel tubes MEGA (12 tubes) for CITIZEN M32 VIII. |

Kits for tool holders:

To substitute brass nozzle ball or brass tube. Avoids wear and consequent mechanical slack as all parts are manufactured in steel. Provides a much better orientation of the nozzle and delivery of coolant. The complete range of nozzles in the SCS program can be used to optimize cooling.

| Ref. | Description |
|-------------|---|
| MK-TH-01-00 | Kit for stationary or driven tool holder. Initial connection: Ball Ø 10 mm. HECTO. (1 x HE-IC-02-00 + 4 x HE-AC-01-00 + 1x HE-NZ-01-00) |
| MK-TH-01-01 | Kit for stationary or driven tool holder. Initial connection: Ball Ø 12 mm. HECTO. (1 x HE-IC-02-01 + 4 x HE-AC-01-00 + 1x HE-NZ-01-00) |
| MK-TH-01-02 | Kit for stationary or driven tool holder. Initial connection: Ball Ø 14 mm. HECTO. (1 x HE-IC-02-02 + 4 x HE-AC-01-00 + 1x HE-NZ-01-00) |
| MK-TH-01-03 | Kit for stationary or driven tool holder. Initial connection: Ball Ø 15 mm. HECTO. (1 x HE-IC-02-03 + 4 x HE-AC-01-00 + 1x HE-NZ-01-00) |
| MK-TH-01-04 | Kit for stationary or driven tool holder. Initial connection: BSP 1/8". HECTO. (1 x HE-IC-01-00 + 4 x HE-AC-01-00 + 1x HE-NZ-01-00) |

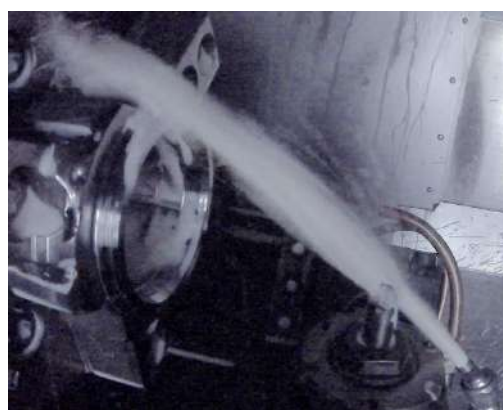
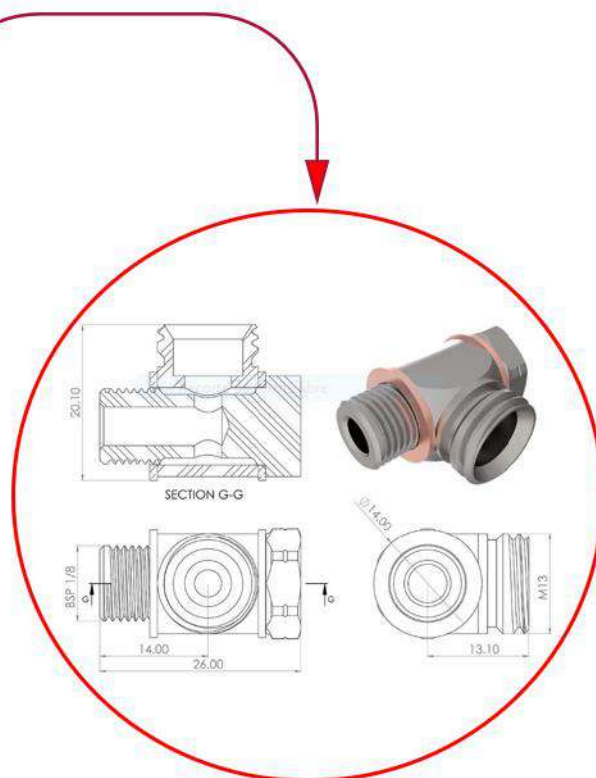


MK-TH-01-04 – Kit mounted in a rotary tool holder with 4 articulated segments, straight nozzle ID:6 mm and BSP 1/8" connection.

Kits for CNC turret disc – 90° outlet:

To substitute copper tubes. Traditional cooling with copper tubes implies inconsistent bending with potential strangling of the coolant flow. The extreme of tube (coolant outlet) is just shaped by flattening it without any precision. This kit brings all the advantages and possibilities of the SCS articulated steel tubes maximizing the coolant flow and allowing to easily direct the coolant stream where it is truly needed.

| Ref. | Description |
|-------------|--|
| MK-TD-01-00 | Kit single 90° outlet on back face of turret disc. BSPT 1/8" HECTO. (1 x HE-DA-02-00 + 1 x MI-CA-01-13 + 4 x HE-AC-01-00 + 1 x HE-AC-01-01 + 1x HE-NZ-01-00) |



END OF DOCUMENT